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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

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Seaman Prize Essay.

HOW BEST TO PROMOTE RIFLE PRACTICE AMONG OUR COUNTRYMEN IN TIME OF PEACE AS A PREPARATION FOR WAR.

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INTRODUCTORY.

THE ability to march and to shoot are two essential requisites for a soldier, and a force proficient in these two respects will give a good account of itself in war. Shooting bears much the same relation to tactics that marching does to strategy; it is the means by which the tactical problem is solved, just as marching is the means by which strategy becomes effective.

In primitive countries, the number of men who could use arms with skill was equal to the number of able-bodied male inhabitants; for then the national danger meant individual danger, and no special effort on the part of the State was required in order to make her citizens fit themselves for her defense. Thus it was in our early history every man and many women were proficient in the use of the rifle, for it was necessary both for personal defense and as an aid in procuring food; and this proficiency continues to the present day in certain portions of the West and South. Hence the often-quoted (now misquoted) statement that we are a nation of riflemen.

As the nation grew more powerful and conditions more settled, national danger became to most citizens a distant and

vague possibility, a bugbear invoked by our military authorities to persuade Congress to make more liberal appropriations. Men became more and more absorbed in personal business affairs and the pursuit of pleasure and wealth, and our practice with the rifle has fallen into such disuse that out of an estimated population of 16,500,000 available for military service, exclusive of the Philippines, not more than 200,000 can shoot with the United States service rifle; 750,000 are familiar with rifle firing of some description, while the remaining 15,550,000 are either ignorant of its use, or are so unskilled as to be valueless. It may be noted here that Germany, with a population of 56,000,000, as compared with 76,000,000 for the United States, has at her disposal for national defense a trained force of 8,000,000 men.

Our national danger is as great now as it was in the past; it differs only in kind; with the nations of the world looking on our rise and progress with an ever-jealous and watchful eye, with a constant succession of conflicts between capital and labor, with a steadily increasing anarchistic element—can any thoughtful man assert, with our small regular army even when combined with the National Guard, that the United States is so secure that she does not need to have her citizens prepared for her defense against both external and internal foes? The national sense has been lulled to sleep by the sirens Peace and Prosperity, and by success in war against a weak power; but it must be roused, or like the fatal sleeping sickness of Africa, the slumber will finally end in paralysis and national death.

How then are our citizens to be persuaded to do their duty towards the State and towards themselves? Abroad this duty is compulsory, and the system of universal service prevalent in Continental Europe has converted the great body of citizens of the various countries into trained soldiers, in some cases trained to the highest degree of efficiency. Such a system is impossible in the United States, as it is repugnant to our ideas of liberty, natural and inculcated, and would seriously interfere with the wonderful commercial development of the country. The service rendered by our citizens must be voluntary, and the military authorities can only suggest, or guide them so that their efforts shall be exerted on uniform lines and tend to the highest efficiency of the whole under service conditions.

Voluntary service will be rendered efficient by patriotism, self-interest (personal danger in former times), emulation, rewards, reasonable requirements, and popular approbation. With our small Regular Army and National Guard, amounting altogether under peace conditions to less than 200,000 men, and with the aversion of the average citizen to military service in time of peace, only a minor proportion of the population can receive complete or even partial military training; but a large proportion may certainly be induced to learn the use of the rifle if the opportunity is offered to them in a sufficiently attractive form. If the great mass of our population were good shots with the service or any military rifle, it would be a long stride towards efficiency in war, for shooting cannot be learned in a day, but requires careful and long training, for which, when war breaks out, there is neither time nor opportunity.

The amount of resistance to trained soldiers which may be offered by men skilled in the use of the rifle and possessed of great mobility, but otherwise untrained in a military sense, is well illustrated by the late British-Boer war, in which a force of less than 50,000 Boers required for their conquering a trained force of over 250,000 British.

To aid in framing a system suitable for the development of the general use of the rifle among our countrymen, a study of the methods employed abroad, in the United States Army, the National Guard, and in rifle clubs has been made, and the most suitable of these methods have been framed into a system adapted to our needs from a military standpoint.

In our Regular Army and National Guard all practice is prescribed in the Firing Regulations, edition of 1898, modified by General Orders 20, 50 and 65, Series of 1903, to which, to avoid repetition, the reader is referred. Under the Act approved January 21, 1903, members of the National Guard are authorized to participate in the annual maneuvres with the regular forces, and while so participating, receive the pay, allowances and transportation of regular troops. When encamped at any United States post or camp, they may be furnished with an allowance of ammunition prescribed by the Secretary of War for instruction in firing and target practice under the direction of an officer selected by the proper military commander. All members of the National Guard are to

be armed and equipped as prescribed for the Regular Army, within five years from the date of the approval of the Act.

In order for a State or Territory to share in the annual appropriation by Congress, all of its organized forces are required to participate in practice marches or to go into camp for five consecutive days, and to be assembled for drill and instruction, or for target practice at least 24 times annually. Annual inspections are also required by a State or regular officer. On the application of a governor, one or more regular officers may be detailed for duty at annual encampments, or on general duty with the State troops. Consequently ample means are provided for rendering the National Guard efficient soldiers, and it is then simply a question of how the means shall be most effectively used.

RIFLE CLUBS.

The most important civilian rifle society is the National Rifle Association, with its affiliated clubs composed of various local civil organizations and many National Guard regiments and companies. This Association is making earnest efforts to encourage rifle shooting throughout the United States, and it was through its efforts that an annual appropriation of $2,500 has been secured from Congress for an annual national rifle competition, the conditions for which are given in full in General Orders 73, 1903.

The Association has adopted a code for qualification in rifle shooting similar to that prescribed by the War Department for the National Guard, and official score sheets and instructions are to be supplied to all rifle clubs in the United States to give citizens, not connected with the National Guard, an opportunity to qualify, and be enrolled in the "National Marksman's Reserve." Those who qualify are to receive a suitable decoration, and their names are reported to the War Department.

The National Association presents annually to each affiliated club a medal to be competed for by its members, the results of the competition being published in the annual report of the Association. Most of these affiliated civilian clubs use rifles of every description, some of which would be quite useless in war on account of delicacy of construction and complexity of sights. Various targets are also used, and there is but little system or uniformity in conducting practice.

Many handsome prizes are given in the annual meetings of the National Association, some competitions being open to all comers and all arms, and some being limited to military rifles or to particular classes of competition. Both individual and team contests are provided for. In the National Competition, under section 4 of the Act of January 21, 1903, National Guard teams receive the pay, subsistence and transportation of regular troops.

CRITICISMS AND COMMENTS.

Examining the regulations for the United States forces, the National Guard, and club methods, it will be noticed:

(1) That all our preliminary instruction for the regular troops and for the National Guard is excellent, and thoroughly prepares the recruit for range firing.

(2) More time is devoted by our troops to firing at fixed rectangular targets at known ranges than seems advisable, all of the fire prescribed being at known ranges, and all at fixed targets excepting the rapid fire in the marksman's course.

(3) No opportunity is given the United States soldier or National Guardsman to put his estimating distance drill to practical use.

(4) No field practice is prescribed either for the Regular Army or for the National Guard, whereas 50 per cent. of the ammunition is thus expended abroad.

(5) Volley firing is retained, and is delivered with the company in single rank at an interval of one pace between men, a formation which could scarcely be depended upon to deliver good volleys under fire.

(6) The allowance of ammunition, 400 rounds per man, is exceedingly large, being twice as great as the allowance for the European soldier.

(7) We do not seem to lay sufficient stress on the importance of developing a large number of fair shots rather than a few experts, or on developing independence and individual skill in picking out targets, and estimating distance under service conditions.

(8) Our rate of rapid fire, ten rounds per minute, is in excess of what has been found profitable by experimental firing in Europe. A greater number of hits would probably result with a smaller rate.

(9) We have no competitions, either for the Army or

National Guard, between organizations such as companies, firing under field conditions.

(10) No compulsory course is prescribed for the National Guard.

(11) There is a lack of useful practice and uniformity in clubs as regards methods, arms and targets, due partly to lack of funds and partly to need of a central controlling authority.

These criticisms, so far as the Regular Army and National Guard are concerned, refer to the regulations provisionally prescribed in recent General Orders, and will be probably unnecessary as soon as the new edition of the firing regulations is issued.

GENERAL PRINCIPLES.

Before proceeding to the selection of a system adapted to our needs, certain principles governing rifle practice will be stated generally without argument, as they are mostly self-evident.

I. Preliminary instruction should be thorough to avoid waste of time and ammunition on the range and damage to the rifle.

II. Range practice is a means to secure efficiency in field practice, and not an end.

III. For military training, a large proportion of the firing should be on targets resembling what will actually be fired at in war, and the practice should be carried out as nearly as possible under service conditions.

IV. Where field practice can not be held, range firing should not therefore be neglected, for a good range shot will become a good field shot much sooner than will a man who is ignorant of the use of the rifle.

V. Where Government aid is given to encourage rifle firing, the methods employed must be uniform, and adapted to fit a man for military service.

VI. The service rifle must be employed to give the best results from a military point of vew, but as a good shot with any rifle is far more valuable than a man who can not shoot at all. practice with any military rifle should be encouraged until the War Department can supply service arms to all receiving Government assistance.

VII. Collective individual skill is the object to be attained in target practice rather than efficient volley firing.

As there are still many advocates of volley firing, the following examples are submitted in support of this principle:

Volley firing has been generally abandoned in Europe. Experiments conducted at Brück in Austria showed that it was inferior to individual fire at all ranges, at all targets, and in all formations, and in experimental firing against a battery at ranges varying from 1,600 to 2,100 yards, the individual fire of a single section in extended order was more effective than the volley firing of an entire company of three sections in close order.

In British experience with savage tribes, volley firing has been found to be entirely ineffective against men skilled in taking cover like the Hill Tribes of India, but gave good results in the open against masses at the battle of Omdurman. In South Africa, the British volleys ceased at one thousand yards from the Boer positions, and were ineffective.

In Cuba, volleys could not be used by our men, but were used effectively by the Spanish on the defensive. This does not prove, however, that skilled individual fire would not have produced equally good results.

Major Bullard states that at Lipa, in the Philippines, a body of fifty natives fired several good volleys at a range of 1,000 yards into the flanks of the 38th and 39th Regiments of Infantry, while in column of fours, without hitting a man; while on the other flank, a single rifleman at about the same range killed two men, and caused the deployment of an entire company.

The great advantage of the volley is that it gives better control over the troops, and it should therefore be retained for operations against untrained masses, and it may possibly be used with advantage on the defensive, but on the offensive at least it seems now impossible to use it; consequently the more effective form, controlled individual fire, must of necessity generally take its place.

VIII. Practice with a toy rifle and fancy shooting have no military value.

IX. The object of any system adopted must be to produce a minimum of bad shots rather than a few experts.

X. Much field practice will now be required at extremely long ranges, *i. e.*, in excess of 1100 yards. The old rule in regard to not opening fire until within 600 to 700 yards is no longer applicable, for the British in their attacks on the Boer

positions were often brought to a halt by the defensive fire of the Boers at ranges varying from 850 to 1100 yards. Consequently the attack must be able to produce an appreciable effect on the defense at greater ranges than formerly considered necessary.

XI. There is a limit which rapid fire should not exceed. This has been found to be seven rounds per minute. Beyond this limit, the proportion of hits falls off inversely as the square of the number of rounds fired. That is, suppose a company of 100 men, firing 7 rounds per minute, makes in ten minutes 10% of hits, or 700 actual hits; if the rate be increased to 10 rounds per minute, the number of hits would be $10{,}000 \times \frac{1}{10} \times \frac{7^2}{10^2}$ or 490.

XII. Independent action, good judgment and skill must be developed in the individual soldier to a much greater degree than was formerly considered necessary.

XIII. The most valuable school for the production of riflemen is the Regular Army or the National Guard, as men thus obtained will be fitted to some extent at least for actual service.

XIV. All clubs must be under the control of a central body, preferably the National Rifle Association, to insure useful practice, harmony and uniformity. The National Association in turn must be subordinate to the War Department in so far as prescribed practice with the United States rifle is concerned.

PROPOSED SYSTEMS.

The system of rifle practice to be adopted in the United States for developing a body of trained riflemen may be considered under the following heads in order of relative importance and completeness:

The Regular Army.
The National Guard.
Rifle Clubs using the service rifle.
Rifle Clubs using any military rifle.
Rifle Practice in Schools.

The system for the Army must be complete and thorough as possible; that for the National Guard should correspond so far as time permits to that prescribed for the Army; the Rifle Clubs can do no more than develop skilled shots at fixed tar-

gets: the firing for schools will generally be limited to gallery and short-range practice.

The Regular Army.—The allowance of ammunition for each man, 400 rounds, is so ample that a large proportion of each command should be proficient not only in range practice but also in field practice. The preliminary training must be thorough, the effort being made to inculcate principles as well as practical knowledge. The present system is well adapted to the purpose in view.

The instruction practice might be limited to ranges not exceeding 600 yards; for a man who has learned to be steady and to shoot at 600 yards should be qualified to fire at all ranges. In fact the Germans do no range shooting beyond 650 yards.

The record practice might be equally divided between the rectangular targets and the silhouettes: as now prescribed, a large proportion of the time and ammunition in record firing, about 60%, is expended on targets which bear no resemblance either in form or position, to what the soldier would fire at in actual battle. The necessity of training men in peace practice to pick out indistinct objects, estimate the range, and fire on targets resembling men lying down, kneeling, standing, or under cover, is shown by the fact that the British, in the Boer War, had the greatest difficulty in locating the small, indistinct targets presented by the Boers, their peace training having been mostly on conspicuous targets at known ranges.

In view of the great distances, 850 to 1000 yards, at which the British were brought to a halt in this war, the skirmish firing should now begin at a range of 1000 yards.

The range firing should be followed by actual field practice, in which the entire command should take part, and on this should the relative efficiency of the companies depend rather than on the range practice. That company which at the close of the season could show the highest figure of merit based on range firing, with a weight of unity, and the best record in the field firing with a weight of two, as decided by either the battalion or regimental commander, or by a board in the case of more extensive competitions, should be regarded as the most efficient company in the command. In both skirmish firing and field firing the largest numbers possible should be employed simultaneously in order to accustom the men to the noise and confusion of battle.

Our present system of collective firing is not realistic, as the ranges are known and the targets are fixed and conspicuous.

Figures of merit may be deceptive, for the company which has the minimum of poor shots rather than the best figure of merit will make the best showing in actual battle. Monsieur de Bloch states in this connection, "That in actual warfare the difference between skilled marksmen and ordinary marksmen will be very slight. Emotion and fatigue level all * * *." Consequently the company which at the close of the season showed the minimum of men who had not reached the grade of first classmen should, from de Bloch's standpoint, be judged the most efficient even in range practice.

In the field practice, the firing should be carried out under service conditions, the men in heavy marching order, and after having made a march, or having been double-timed. The English methods give many valuable suggestions. Their system is based on their experience in South Africa, where they had great difficulty in adapting their former peace training to actual war; for it is a general principle that men naturally act in war according to their peace training, as evidenced by the English as stated above, by the Russians at Plevna in 1877, and by the Germans in the war of 1870 with France.

Suggestions for targets for field firing are given under the heading "Targets," and much valuable information will be found in regard to the German, French, English, Russian, Austrian and Swiss methods both for range and field firing in Vol. 35, Military Information Series.

The object of the entire course is to develop the most effective individual fire, controlled as far as possible, on the battlefield. Consequently, individual responsibility, good judgment, resourcefulness, and ability to advance under cover must be developed in each man to the highest extent.

Colonel von Lindenau of the German General Staff has published the following general conclusions in regard to individuality and the necessity of training and endurance as the result of his study of the British-Boer war: "In all points the infantry attack of the future will require more individuality than in the past. It will have to be carried out according to the nature of the country, either by rushes, lying down from time to time, or by running as the occasion may demand, and supported by fire from well-chosen positions, especially on the

flanks. It will sometimes go on for hours in detached halts to fire, in the endeavor of either side to obtain a superiority of fire. The hope of having obtained this will often prove a fallacy, and fire will have to be reopened.

Dogged perseverance and steady endurance will accomplish more than impetuosity of movement. Progress will be all the more certain in proportion to the preparation made and the contingencies allowed for beforehand. * * *"

The National Guard.—The chief difficulty in providing a suitable course for the National Guard is the lack of time for either range or field practice. Their preliminary drills and gallery practice may be readily completed as prescribed for the Regular Army, in their armories, at night, during any portion of the year. It has been estimated that to qualify a regiment as marksmen, each man to fire 150 shots, would require two months on a range containing ten targets. Consequently it will be impossible for the great majority of the National Guardsmen, and probably impossible for any of them, to even go through the course of range firing for the regular troops. The maximum time available annually for each company or regiment rarely exceeds two days.

The practice should be divided into three parts, viz.: General, or Compulsory Range Practice; Supplementary Range Practice; Supplementary Field Practice. The allowance of ammunition for compulsory practice should be 100 rounds per man, and for supplementary practice, 100 rounds additional for those men who volunteer to take it. The ammunition should be issued at the beginning of the year on the requisition of the General Inspector of Rifle Practice for the State, the requisition showing the amount on hand, and being accompanied by a detailed report showing the expenditure of the previous year's allowance and a schedule of proposed firing for the ensuing year.

The general practice should be required of all organizations annually, and should consist of individual fire at fixed targets and ranges of 200, 300, and 500 yards as prescribed in General Orders 50, 1903, and a skirmish run as prescribed for the Regular Army. At least two scores must be fired at each range, the classification being as described in G. O. 50.

Supplementary range practice should be voluntary, and should be allowed only for men who have qualified at the shorter ranges, and who desire to attain one or more of the

various classes given in G. O. 50. Part of the general and supplementary practice should, where possible, be on figure targets as suggested for the United States troops.

Supplementary field practice is also voluntary, and should be permitted for those companies who desire, or are able to have it. Opportunity for this class of practice should be found by those troops of National Guard who take part in the annual maneuvres, and should at least include a limited amount of firing at disappearing and moving targets at unknown ranges.

Rifle Clubs Using the Service Rifle.—In clubs it will probably be impossible to have firing other than on fixed bulls-eye targets at known ranges, but the figure targets may be issued if desired, and their use encouraged.

Service rifles should be issued to any club of thirty or more members having proper vouchers, and the club bonded for twice value of the rifles to cover loss and unreasonable damage. At least 50% of the members having service rifles should be required to take the practice annually at 200, 300 and 500 yards, firing at least two scores at each range. In case of failure to accomplish this for two years in succession, the use of the rifles should be forfeited, and they should be turned in to the United States. Members, who so desire, should also be allowed to practice at 600, 800 and 1,000 yards where practicable. The maximum Government allowance of ammunition should not exceed 100 rounds for each member firing the prescribed course, and should not be issued to any member who is evidently physically disqualified for military service. The ammunition should be furnished the first of the year on the requisition of the president of the club approved by the Adjutant-General of the State in which the club is organized. This requisition should be based on an estimate of the number of men who will fire at the required ranges and on the number who will take the supplementary practice at the longer ranges during the ensuing year. From this estimate should be deducted the amount on hand remaining from the allowance of the preceding year as shown by an annual report which should clearly exhibit the number taking the prescribed and supplementary courses, and the number of rounds expended by each man at each range. The club or individual members should be allowed the privilege of buying additional ammunition at cost. All clubs should be inspected monthly by officers detailed from the Army or from the National Guard, and a

report of the inspection made to the Adjutant-General of the Army.

In organizing new clubs, men formerly belonging to the Regular Army, National Guard, or Volunteers should be encouraged to join, as they can act as instructors for the inexperienced men. The club should not be regarded as a social organization, for what is desired is the training of riflemen, and not the advancement of social intercourse.

Where only short ranges are available, the United States standard short-range targets may be used, but care must be taken to construct a safe backstop. In certain cities in England, satisfactory ranges have been constructed on the tops of houses, and such a plan seems possible of adoption in many of our factory towns where the great length of many of the buildings would give an excellent opportunity of trying a range of this nature. Where there is a local gun or rifle factory, there is usually a range, and by interesting the proprietor in the club, it is probable that he would permit the use of his range, and could give a great deal of valuable assistance and information to the other members.

The principle difficulty in the maintenance of successful clubs in the past—that is, difficulty of a material kind—has been, of course, the lack of range facilities and the expense of rifles and ammunition. If these are supplied, the practice will be greatly encouraged and extended. The extent of success which clubs may hope to achieve, when assisted by the General Government, is well illustrated by those of Switzerland. As they are closely connected with the army, it will be necessary to give a brief synopsis of the Swiss military system.

The army consists of a militia in which all men must serve between the ages of 20 and 50. In his first year of service each recruit serves 45 days with the colors. He then passes to the Elite, in which he remains for 12 years, being required to serve 16 days with the colors for each of the first 2 years. At the expiration of his 13th year of service he is transferred to the Landwehr, in which he serves 12 years. Only a part of the Landwehr is organized; these are subject to annual inspections. The remaining 5 years of service is spent in the Landsturm, which is only partially armed.

Every member of the Elite, Landwehr and armed Landsturm are required to fire annually 30 to 40 rounds. These may be fired in a recognized shooting club; if not thus fired,

the man failing is required to join his command at his own expense, and take a course of three days in musketry training.

There are now in Switzerland 3,600 shooting societies, with a membership of 214,000, who in 1902 fired 23,000,000 rounds. There are also a number of school battalions, aggregating 6,420 boys, who receive an annual government allowance of $1.00 per capita for ammunition. The ammunition for the regular firing is furnished by the government, and every member of the Elite, Landwehr and armed Landsturm are allowed to keep their rifles in their homes, subject to inspection, and are allowed to use them as much as they see fit for practice. Additional ammunition is supplied to the clubs by the government at a price 25 per cent. below cost.

Each commune is required to supply a range for firing at 300 and 400 yards, the clubs supplying targets and equipment. The shooting usually takes place on Sunday when the men are free from work. The population of Switzerland is 3,325,000, less than one-twentieth of ours. Could we train our citizens in the same ratio, we would have 4,280,000 at our disposal for national defense.

All classes of clubs, regular or otherwise, should preferably be affiliated with the National Rifle Association, in order that there may be co-operation and a certain degree of uniformity in the conduct of contests, etc. The conditions for qualification for membership in the "National Marksman's Reserve" should be the same with all of them; the names of men thus qualifying should be reported annually to the War Department and to the Adjutant-General of the State in which the club is organized, and special consideration should be given such men by the National and State Civil Service Commissions, for this qualification is a duty, the fulfillment of which should be recognized by both the General Government and the State.

Of course the principle of local self-government must apply in all the shooting clubs as it does in other similar cases, except in so far as the prescribed practice with the government rifle and allowance of ammunition is concerned; this must be carried out strictly in accordance with regulations. An effort should, however, be made to simplify and arrange details so that a standard system of targets, marking and scoring, and a regular and uniform annual programme of firing will be used by all the clubs. This programme should be so arranged that it may be employed, either in full, by those clubs which have

the advantage of a large range, or in part, by those whose facilities are more limited.

Rifle Clubs Using Any Military Rifle.—As it must be some years before the service rifle can be supplied to the National Guard and clubs, those clubs using any military rifle should be recognized and assisted by the Government. A course should be prescribed, a money allowance for ammunition allotted, and the use of ranges permitted under the same restrictions as for regular clubs. As fast as the service rifle can be manufactured it should be issued, and all clubs, so far as their military practice is concerned, be required to conform to the standard.

Rifle Practice in Schools.—There are now in the United States, approximately, 50 schools, colleges and universities aggregating about 37,000 students, having military instructors detailed from the Army. Rifles and ammunition should be issued to these on requisition from the proper authority and the officers detailed to them, in the case of non-military schools, should endeavor to persuade the students to join local student rifle clubs affiliated with the National Association. Where the schools are military in character all students should be required to go through as much of the regular range practice prescribed for the National Guard as is possible with the time and range available.

An effort must be made to make the school authorities see the importance of rifle practice as a national safeguard, and to take steps to establish suitable ranges at least large enough for firing at 200 and 300 yards. The establishment of such ranges is a worthy field for the patriotic citizen who has any public benefactions in view, or for the capitalist who should take a more vital interest in the national safety than the average citizen can be expected to do.

The same system could be extended to the schools, etc., without military instructors. The prescribed course, so far as practicable, for the non-military colleges should be the same as for the civilian clubs, and they should be subject to the same restrictions and entitled to the same privileges as the clubs.

The total school population of the United States which might be profitably instructed in target practice amounts to nearly 1,000,000. It will, of course, be practicable in the beginning to enroll only a small number of these. As already

stated, Switzerland has 6,420 youths enrolled in her school battalions. Could we adopt the same system in the same ratio we would have 128,000 young men fitting themselves for the defense of the country. This practice among the schools and colleges has been encouraged for many years abroad, and in 1901 thirty-four English schools were represented in the annual matches at Beasley, there being at one time nearly four thousand school boys on the Beasley ranges in the several matches.

Issue of Arms and Ammunition as at Present Authorized.—Under the present law it is not possible to issue or sell arms or ammunition to clubs, nor ammunition to the National Guard except when encamped at a military post, or taking part in maneuvres, but the Secretary of War has suggested to the National Rifle Association that private gunmakers might make the service rifle on specifications furnished by the Association, and has authorized the inspection and stamping of arms so made at the United States Arsenals. The service ammunition may, of course, be purchased from private manufacturers.

Musketry School for Officers.—A school, preferably at Fort Leavenworth, giving a thorough theoretical and practical course in the science of rifle shooting and practice should be established, to which officers from the various regular regiments, the National Guard, and students from schools and colleges having military instructors might be sent in turn. Authority for such detail, so far as officers of the National Guard and students are concerned, is found in par. 16 and 23, Act of January 21, 1903, men so detailed receiving the same travel allowances and quarters or commutation of quarters as regular officers, and commutation of subsistence at the rate of $1.00 per day.

To this school a captain and lieutenant from each regiment of regular infantry and cavalry should be sent each year. Ten officers from the seacoast artillery, ten from the field artillery and two from the engineer battalions should also be selected yearly by the chief of staff on the recommendation of the chiefs of the respective arms for attendance at the school. Each regiment of the National Guard and each school of the class above described should have the privilege of sending one officer or student yearly.

The practical course could be covered in one month, the theoretical in six months. The former should be such as to

thoroughly fit a man for regimental range officer, complete instruction being given in the use, care and preservation of the rifle, and the special duties of range officer, including the planning, laying out and construction of ranges, and in general all the mechanical knowledge and practical information required of the expert rifleman.

The object of the theoretical course should be to turn out trained specialists for duty at the school itself or for duty with the Infantry Division of the General Staff. The school should have under its supervision the practical testing of infantry equipment and ammunition, and should recommend changes in the rules for infantry fire and drill regulations when such are required by improvements in arms and progress in the art of tactics.

TARGETS.

The requisites for a good marksman are steadiness, good eyesight, and good judgment as to the range, light, wind and atmospheric conditions. Good eyesight is a natural gift, the lack of which may be partly remedied by using glasses, telescopic sights, etc., means which in general could not be employed on the battlefield. Steadiness and accurate judgment of the range are developed by the use of proper targets in peace practice—the first by practice on targets with small bull's-eyes at moderate ranges; the latter by peace practice at unknown ranges on targets resembling those presented in actual war. It must be remembered in this connection that the target should not be devised with the end that men may make a good score in practice and a high figure of merit for the command, but that the object is that they may be trained so as to be most effective in battle.

To determine a man's actual skill with a rifle, its absolute accuracy must be determined. This may be done by firing a number of rounds from the rifle fixed in a clamp, at exactly the same elevation and azimuth and finding for various ranges, the mean lateral and vertical deviation, excepting very abnormal shots. A perfect shot then, at a given range, should be able to put all shots into an elliptical bull's-eye whose vertical and horizontal axes are respectively twice the mean vertical and horizontal deviations for that range. The vertical deviation formerly exceeded the lateral by 15 to 20 per cent., depending on the range, and it was deemed advisable

to use an elliptical bull's-eye whose horizontal axis was equal to twice the mean horizontal deviation of the carbine for that range at which the target was used. The excess of vertical over horizontal or lateral deviation was increased by two-thirds to allow for variations arising from taking a fine or coarse front sight, and the resulting sizes of the bull's-eyes were 8 by 10 inches for 100 to 300 yards, 18 by 24 inches for 400 to 600 yards, and 32 by 45 inches for ranges in excess of 600 yards; the dimensions given are those required for 300, 600 and 900 yards. Due to the present exceedingly flat trajectory of the newest form of Springfield (its maximum ordinate is only 20.67 feet for a range of 1,000 yards, as compared with 43.7 feet for the old Springfield), the vertical deviation has been greatly decreased, while there has been no great decrease, if any, in the lateral deviation. Consequently bull's-eyes may now be circular, as prescribed in General Orders 20, 1903.

For the development of steadiness, the bull's-eye might be reduced to 4 inches at 200 yards, as the radius of the circle of shots for that range is under 2 inches. This could be accomplished by pasting a circle of white paper 4 inches in diameter on the "A" target. The reason for increasing the size of the bull's-eyes in the "B" and "C" targets to 20 and 36 inches, as at present required, is not clear, as the circles of shots for the 600 and 1,000 yard ranges have diameters of 15 and 30 inches respectively. Probably the French rule that the diameter of the bull's-eye should be 1-1,000 of the range was followed. The differences are however so small that there is no necessity of advocating additonal change, and our present targets may be considered as well adapted to range practice.

The skirmish and group targets used in the Regular Army are excellent and would answer for many classes of field firing. Target "F" used in rapid fire is a silhouette on a rectangualr target. It is fired at in an improbable position, and there seems no reason for giving any valuation to shots striking outside of the figure.

For field firing at stationary figures, the various skirmish figures already described as used in range firing would answer very well. To these might be added cavalry figures and representations of field batteries, the men being of course taught to fire at the cannoneers and not at the guns. All figure targets representing men should be khaki-colored, and not black, as at present.

The following are a few suggestions on field firing and field practice:

The individual soldier should be trained in firing at fixed head targets representing men standing in trenches; vanishing targets representing a man's head and shoulders appearing above a parapet to fire, and then withdrawing; crouching, moving targets representing men advancing, retreating, or moving diagonally; surprise targets, consisting of various military figures appearing suddenly at different places, remaining in view only three to five seconds, and requiring the men to estimate the range, and fire quickly; stationary group targets at long ranges; practice in firing on steep slopes; the use of rests for night firing.

For the collective practice, volleys should be limited to long range defensive firing only, at deep and wide targets. If numerous figures are not available, old tent flies may be used to form a horizontal target the size of a company. Collective individual fire should be employed at vanishing and moving targets in as great numbers as are available. In the individual fire the ranges must be estimated by the soldier; in the collective fire they must be estimated by the group leaders.

The course in field firing should also include a regular attack by the company or battalion where space is available over about 2,500 yards, against artillery, cavalry and infantry, all of which may be readily improvised and represented as explained in Vol. 35 of the series issued by the Military Information Division. To this should be added practices representing the company or battalion on the defensive, on flank, rear, or advanced guard duty, as convoy, as escort to a foraging party, etc.

To insure uniformity, all targets and range equipment used by the Regular Army, the National Guard, the clubs, and schools and colleges should be issued annually by the United States, in quantities depending on the amount of firing required of the various organizations.

RANGES.

Ranges may be divided into two general classes, viz.: those for range practice proper, and those for field practice. Since the introduction of the modern high power rifle, the difficulties

of securing a suitable range which shall be reasonably safe have been greatly increased.

A model range proper for practice at fixed distances is described in Hudson's Modern Rifle Shooting. It is about 600 yards wide and 1,200 yards long, facing the sea on the north, and closely surrounded by hills on the other sides. In this space are arranged 36 targets for practice at each range of 800 (900 if desired), and 1,000 yards; 25 each for 500 and 600 yards; 50 each for 200 and 300 yards; 6 each for revolver practice at 25, 50 and 75 yards, allowing 111 targets to be used simultaneously, and giving the necessary room for store houses, mess hall, kitchen, offices, stables and camping ground for a regiment. The firing points are all in the same line, and should be preferably connected with all the butts by a tunnel. The targets at 800 and 1,000 yards are placed 8 yards apart: those at 200, 300, 500 and 600 yards, 4 yards apart. The revolver targets vary in distance apart from 5 yards to 12 yards, depending on the range. In general, however, it will be impossible to get such an ideal site, and large areas must be secured on each side and in rear of the butts to insure the safety of the inhabitants in the neighborhood. If possible, the site should always be so selected that the targets may face toward the south, or east if the firing can take place in the morning.

In calculating the danger space on each side of a range, it is assumed that the maximum angle of divergence for wild shots is $5\frac{1}{2}°$ or 1-10. In case the firing points are not in the same line, the angle of divergence assumed in estimating the danger space for the interior of the range in the case of simultaneous firing at different ranges should be 11° on each side of the line of sight. Greater angles should be allowed in volley firing, say about 15°.

In calculating the amount of land required in rear of the targets, the height of backstop required, or the value of an existing hill as a backstop, it is assumed that the maximum error in elevation would be such that the piece might be fired at an angle giving an extreme range of 2,500 yards. When the targets are all in one line and higher than the firing points, it must be remembered that the effective height of a hill in rear of the butts is its height above the line of sight, and as the line of sight becomes steeper for shorter ranges, a range of this character may be safer for the long ranges than for the short.

A range designed for a National Guard organization must

be larger than one designed for an equal number of regular troops, on account of the limited time at the disposal of the former. In order to form an approximate idea of the size required, it will be necessary to assume the size of the organization which must finish its compulsory practice in a limited time, and the amount of that time. The organization assumed is a company of 100 men, and the time at its disposal for compulsory practice, two days of eight hours each. The compulsory firing assumed will be three scores at each range of 200, 300 and 500 yards, and a skirmish run. The time required for each man is calculated as follows:

9 scores, 5 minutes each	45 minutes.
Time lost changing range, etc.	15 "
Skirmish run	15 "
Contingencies	15 "
Total	90 "

The range should be constructed with all the firing points in the same line, and the targets so arranged that simultaneous firing may take place at all ranges. The capacity of the range will then depend on the minimum number of targets at any one range. The advantages of having all the firing points in one line are absolute safety for men firing at different ranges, better control of the firing line, and saving of land on the sides of the range and in rear of the targets. The disadvantages are a slight decrease in the number of men who can fire in a given time, and the necessity of having a separate skirmish field, but the advantages more than balance the disadvantages.

Two men may fire simultaneously on one rectangular target, and one on each skirmish target. Consequently the number of the latter must be twice as great as the minimum number of rectangular targets at any one range. Under this assumption, with a single rectangular target at each range, and two skirmish targets, at the end of one and one-half hours, two men would have finished their compulsory firing, followed $22\frac{1}{2}$ minutes later by two more, and so on. Therefore in a single day, 36 men could complete the course, or 72 men in the two days.

Hence for a company of 100 men, two targets at each range and four skirmish groups are required. This is under the assumption that the compulsory practice is the same for the entire command, and that no men start firing within

one and one-half hours of the close of the day, the 200 yard range being left open during that time for pistol practice.

Assuming that 50% of the company will desire and be qualified to take the supplementary range practice, one target would be required at each range of 600, 800 and 1,000 yards. If the supplementary practice is to take place on the same days as the compulsory, which is advantageous so far as economy of time is concerned, these targets must also be arranged for simultaneous firing. If the supplementary practice may be taken on other days, the longer range targets may be echeloned in rear of the 500 yard butt. The former arrangement is assumed.

The width of the range at the firing line may then be calculated as follows:

Clear space 50 yards each end of line.	100	yards.
2 targets (800 and 1,000 yards), 8 yard interval. .	16	"
7 targets (200 to 600 yards), 4 yard interval.	28	"
4 skirmish groups	20	"
Total.	164	yards.

The skirmish groups must be placed far enough to one side to be clear of the danger space from shots fired by men standing at the adjacent end of the firing line. The angle of divergence is 11° or $\frac{1}{5}$. The required distance is therefore 200 yards, assuming a skirmish run of 1,000 yards starting at the firing line. The total resulting width at the firing line is hence 364 yards. In case there are no hills on the sides, or in rear of the targets, the length required in front of the firing line is at least 2,500 yards, and the width at the outer end is $364 + 2{,}500\text{-}5 = 864$ yards. In rear of the firing points, sufficient space for camping, store houses, offices, etc., is needed. Allowing three acres for this, the total area required for the range is 340 acres.

The pistol ranges should be put in front of the 200 yard butts, and are available for use during one and one-half hours each day. If they are not needed, men may start firing at 200 yards up to the close of the first day, and on the following day those who have only partially completed their firing start in at the proper point. The firing for the company would then be completed in a somewhat shorter time.

In order to adapt this range for the use of regular troops, and to work it to its full capacity, the number of 600-yard

targets must be increased to two, as the marksman's course requires firing at that range. The resulting area is 343 acres. Where the range is for regular troops alone, it may be made much smaller as the time available is not so limited, but in designing new ranges economy of time should be given consideration.

Local club ranges require a maximum range of 500 yards, and at least two targets, each at 200, 300 and 500 yards, the firing points being in one line. Such a range without backstops is 2,500 yards long in front of the firing line, 130 yards wide at the firing line, and 630 yards wide at the extreme end. This range, including a space 50 by 130 yards in rear of the firing points for offices, etc., contains 200 acres.

By building an embankment between the range proper and the skirmish field, the amount of land required might be reduced, but the height of embankment required for safety is so great that its cost would be probably greater than the saving on the land. The areas given above may also be much reduced when a hill forms a natural backstop or side boundary. The limiting area in rear of the butts will then be determined by finding the intersection of the 2,500-yard trajectories with the surface of the ground. Safe artificial backstops are not practicable, as they would have to be over 300 feet high in rear of the 1,000-yard butts, and for the 500-yard butts over 100 feet high, assuming that in wild shots the rifle may be accidentally discharged with the elevation for 2,500 yards.

Ranges for field practice will vary in size with the size of the organization using them and the arm employed. For a battalion, a space 550 yards by 5,500 yards, containing 625 acres, is considered necessary, the arm used being the rifle alone. For the use of all arms, the French require a space 7,600 yards by 11,000 yards containing 17,270 acres.

Location and Number of Ranges.—Convenience requires that the local ranges should be near the centres of population where the greatest number of National Guardsmen and the largest rifle clubs are found. Financial reasons require that they be in remote and unsettled country so that the land may not cost exorbitant prices. These two conditions are incompatible, and local considerations must determine which of the two shall govern. Generally the former will be the more important, and the local ranges must be within reasonable distances of the centres of population. The large ranges may be more remote,

provided they are accessible, and approximately equally distant from the stations of the troops using them.

The number of ranges of all classes required will depend on the population of the State in which they are situated, and on the proportion of the population belonging to the National Guard, rifle clubs and schools having a course in rifle firing. Full-sized ranges for firing up to one thousand yards should be supplied as soon as possible to each State, with the assistance of the United States, in numbers proportional to the strength of its National Guard, and ranges up to five hundred yards gradually constructed, with public and private funds, near the large cities, as the number of National Guardsmen and members of rifle clubs increase under the encouragement given to target practice by the General Government. The existing United States and State ranges must be improved and their maximum capacities developed.

To form an intelligent estimate of what is required in new ranges and in the improvement of the old, the number of persons who will use the ranges must be approximately known, and the present number, capacity, location, and possibility of improvement of the old ranges determined.

The number of persons using the ranges is assumed as equal to the combined strength of the Regular Army on a war footing, the National Guard, the aggregate of all military schools, and civilian and school clubs. Under the stimulus of the Act of January 21, 1903, it is estimated that the strength of the organized National Guard will be increased to 200,000. It is also assumed that all military schools will have Army or Navy officers detailed as instructors, and hence may receive issues of ordnance, etc. The number of students in such schools is approximately 10,000, all of whom should be required to practice. The number of students at non-military schools and colleges, having military instructors who will practice, is estimated also at 10,000. The number from other schools, colleges and universities who will form into rifle clubs should number about 50,000.

To what extent rifle shooting, with the service weapon, will be developed among civilian clubs, it is difficult to state; for the present, it is believed that the number of members to whom the rifle should be issued, and an allowance of ammunition made, should be limited to the combined estimated strength of the Regular Army and the National Guard, viz.: 300,000.

Congress has already authorized the issue of rifles to the National Guard, and to schools and colleges having military instructors. Therefore additional authority must be secured and funds allotted for the issue of rifles to 350,000 men and ammunition, etc., to 570,000.

Including the 50,000 students at the ordinary colleges, the total club membership would be 350,000, and assuming an average strength of club equal to 100, the total number of clubs would be about 3,500, or one club to every 20,000 inhabitants. The regular civilian clubs will therefore generally be limited to cities having a population in excess of 10,000.

The military posts of the United States having ranges number 80 with a total of 381 targets. Where these are accessible, they must be improved, and National Guardsmen, students, and members of clubs, permitted and encouraged to use them under the supervision of the post commander so as not to interfere with the practice of the regular troops, preference being given, in the order named, to the National Guard, Military schools, clubs using the service rifle, clubs not using the service rifle. The number of ranges which may be thus improved and employed is 22, aggregating 188 targets. During the practice season of three months, on these ranges, if firing could be conducted continuously for eight hours per day, 30,000 men could fire up to 500 yards, and 15,000 more up to 1,000 yards. The Posts selected are The Presidio, Russell, Douglass, Boisé Barracks, Vancouver, Meade, Snelling, Barrancas, Fremont, Madison Barracks, McPherson, Niagara, Plattsburg, Totten, Sheridan, Thomas, Crook, Jefferson Barracks, Leavenworth, Reno, Riley, and Bliss. The remaining posts are isolated or the ranges small.

Of the States, 21 have no ranges, 11 have State ranges and the remainder private ranges. The exact status of the private range is not known. The total number of ranges reported by the State authorities is as follows: 48 of 300 yards, 97 of 600 and 52 of 1,000 or over. Of these, the States own but 17. Each State should have, for the present, one range of the "company" type already described for every 30 companies of the National Guard. The total number required has been found to be 90. This number has been determined on the supposition that the strength of the National Guard of each State will be doubled, and that each State is to be allowed at least one range. If it has more than 30 companies and less

than 60 it is given two; more than 60 and less than 90, three, and so on. The number of existing State ranges up to 1,000 yards or over is ten; the use of the 22 United States ranges will allow a further reduction in the number of new State ranges of about five. Consequently 75 new company ranges must be provided, and the ten existing State ranges repaired with the assistance of the United States, which should bear one-half the expense of construction and first repairs. In subsequent repairs and maintenance, the State should furnish the labor, the United States the material. If the new State ranges can be located near the annual camping grounds it will be desirable to do so.

So far as known, there are no field ranges. One or more of them should be provided in each Department, and regular organizations ordered each year to them for encampment and practice. Where the field range is within reasonable distance, a practice march should be made to it. Field ranges may be established in each department, either on existing reservations, or former battlefields in the east, and as far west as Missouri, may be bought very cheaply, and readily converted into ranges. In the South Atlantic and Gulf States, the United States owns extensive islands and reservations along the seacoast. Portions of these may be converted into field ranges or granted to the States for ordinary ranges, as they are admirably suited for the purpose and would form pleasant summer camping grounds.

The existing ranges of civilian clubs rarely exceed 600 yards, and most of them are probably unsafe for firing with the service rifle.

The land for new club and school ranges must be secured by the club itself or by the school authorities, and the expense of construction must also be borne by them, the equipment being furnished by the United States. In many cases there will be National Guard organizations, clubs and schools in the same place, and these may combine in securing a larger and more commodious range. In this case the United States and the State should bear a proportionate share of the cost of the site and construction. Cities should also recognize the importance of encouraging rifle practice, and should aid clubs and schools within their limits in securing sites and constructing ranges.

COMPETITIONS AND PRIZES.

General.—Competitions without prizes impel men to duty through their spirit of emulation and pride; prizes produce the same effect by holding out hope of pecuniary reward or honorable distinction through the award of medals and mention in orders. The sentiments of emulation and pride and the desire for distinction are commendable, and the appeal to these feelings is sufficient for some men. For others, the hope of pecuniary reward is more effective. Consequently rewards of both character must be provided.

The United States Army.—Post, Department and Army individual and team competitions are already provided for, and are described in General Orders 20 and 65 of 1903. In addition, as soon as field ranges can be provided there should be Department and Army battalion or company competitions. The Department competitions should be under umpires appointed by the Department Commander, and should be for the purpose of determining the relative efficiency of the different battalions or squadrons in the Department not only in range firing but also in field practice. If possible, the battalion should be the unit employed in the competition; if lack of space or other causes prevent the employment of battalions the practice may be by companies. The standing of the different organizations must be based on their range firing and on their skill in field practice. The organizations winning the Department contests will be assembled at some central field range and will compete in field practice for the Army prize. Their relative standings as before will be determined by a consideration of their range practice and field practice. The umpires for the Army contest should be appointed by the Chief of Staff.

The members of the Department teams should receive medals as at present prescribed. The members of the Army team should receive medals as now prescribed, and in addition, if enlisted men, a certificate authorizing an increase of pay of $1.00 per month during their period of honorable service. They should be ineligible for future Army contests after having won three medals or prizes.

The organization winning the Department field contest should receive a suitable trophy, to be retained until the next annual competition. The organization winning the Army

field contest should receive a suitable trophy, to be retained until the next competition, and the enlisted men an addition to their pay of $1.00 per month for one year. The successful organization should be ineligible for future Army competitions for three years.

In the Post Competitions, authorized by General Orders 65, 1903, the various post exchanges might offer prizes.

Each Department is also authorized to send a team of twelve men annually to Sea Girt or other selected range to compete for the National Trophy valued at $1,000 and $500 in cash. There are in addition prizes consisting of trophies and cash, or cash for the five teams making the next highest aggregates, and medals for all of the members of the six best teams. The prizes aggregate $2,500.

The National Guard.—There must be State competitions similar to the Department competitions, and the United States should provide suitable medals for the winning team, and a trophy to be retained one year to be awarded to the most efficient battalion or company in the State, as determined by its record at range practice, field practice where possible, and by the reports of the U. S. and State inspectors.

When the military authorities of the State so desire, teams may be sent to take part in the competitions of the Department of which the State forms a part for the prizes awarded to the Regular Army. Any State should also have the privilege of entering a battalion or company in the Department or Army field competitions where found practicable.

Each State, Territory and the District of Columbia is authorized to enter a team of twelve for the competition for the National Trophy under the same conditions as the Regular Army.

In each regiment, battalion or company, individual matches should be held monthly on the local ranges, or where there are no local ranges, in the various armories. The prizes might be pools formed by organizations or individuals entering the contests.

Clubs and Schools Using Service Rifle.—The clubs should hold monthly individual contests, awarding small prizes in each match. At the close of the year the United States should award a trophy and a cash prize of $5.00 per member firing the prescribed course to the club recommended by the Board of Twenty-one, authorized in the Army Appropriation Act of

March 2, 1903, from a consideration of inspection reports, the proportion of members who have fired the required number of rounds, of the results accomplished and of the general character of the work of the club. In addition each club should receive annually from the United States a silver medal to be awarded to the member who makes the best record in competition firing at 200, 300 and 500 yards, or at longer ranges if available, carried out as prescribed for the Regular Army. Many competitions are also open annually at Sea Girt for the various clubs.

It is not believed that students will have time in general to take part in competitions outside of their own range. Possibly the military schools might be able to enter a team in the National Competition already authorized, and they should be given that privilege. To encourage contests at the schools themselves, a medal may be given annually to each, as in the case of clubs.

Clubs Not Using the Service Rifle.—Such clubs should be urged to provide their members with the service rifle as soon as it can be issued. For the present, the United States should furnish each club of this nature with a silver medal to be awarded under the same conditions, as far as applicable, as in the regular clubs.

All Comers Competition.—Finally, to further encourage individual skill, a prize given by the United States, consisting of a gold medal and an annuity of $100.00 per year for life should be shot for annually with the service rifle at Sea Girt or other suitable range under the auspices of the National Rifle Association open to all citizens of the United States not specially disqualified. The competitors from the Army should be the winners of the first and second places in the Department and Army teams, or where the Department prizes have been won by members of the National Guard, the two regulars having the highest aggregate on the team or in the competition, should be selected as the representatives of that Department.

The Navy should be represented by its ten best shots as determined by their regulations.

Each State and the District of Columbia should be entitled to send its two best men as determined in the District or State competitions, or States might send men who had won places on Department teams.

Entry for members from the Army, Navy and National

Guard should be free; all other contestants should pay an entry fee of five dollars. Men should be debarred who have already won first prizes in National contests, and no National Guard organization should be represented by men who have been serving continuously for less than two years or whose average attendance at drills, etc., for the past two years had been less than 70% of the possible. No man having once won the prize should be eligible for the competition in future.

The firing should be as prescribed for the National Trophy with a skirmish run in addition.

ESTIMATES.

Arms and Ammunition.—Provision has already been made by the Act of January 21, 1903, for equipping the organized National Guard with the service rifle. Issues of arms may also be made to schools and colleges having military instructors. It remains therefore to determine the additional cost of arms for the clubs, and the cost of the ammunition for the National Guard, clubs and schools. The strength of the National Guard is assumed as 200,000; the club members at 350,000, including 50,000 students; the students in schools to whom the issue of arms has already been authorized at 20,000.

The cost of the service rifle is $15.00. The total additional issue which must be authorized is 350,000, costing $5,250,000.00.

The following table gives the amounts of ammunition required:

100,000 National Guardsmen, compulsory course	10,000,000	rounds.
100,000 National Guardsmen, supplementary practice	20,000,000	"
350,000 club members	35,000,000	"
20,000 students in schools having military instructors	2,000,000	"
Total	67,000,000	rounds.

The cost, at $25.00 per thousand, is $1,675,000.00. The shells saved should give an annual credit of $475,000.00, making the net annual cost of ammunition $1,200,000.00.

Ranges.—The United States must establish at least eight field ranges, assist in establishing 75 State ranges, repair, and enlarge where possible, 22 existing U. S. ranges, and assist in repairing and enlarging, where needed, 10 State ranges, and

must furnish equipment for all ranges for the National Guard, clubs and schools.

The United States owns sufficient land in seven of the eight Departments for the establishment of field ranges. For the present it is assumed that these ranges will be used only for the field practice of a battalion of infantry or squadron of cavalry, and will therefore contain 625 acres. To start with, 100 moving and disappearing targets will be needed, costing $5.00 each. As ten figures may be operated by a single man, ten butts, will be required, costing $100.00 each. Fencing will cost $300.00 per mile; clearing $20.00 per acre. The camp site must be graded and drained, and latrines, magazine, store houses, mess hall and kitchen erected. As organizations may be ordered to the range by regiments, the buildings and camp site must be designed to accommodate a force of about 1,500 men.

The site selected for the range must be such as to give an ample and sanitary camping ground, ample water supply, and be convenient for supply and accessible to the troops using it.

The estimated cost when the Government owns the land is as follows:

Buildings	$21,500.00
Clearing and grading	12,500.00
Targets and butts	1,500.00
Fencing	2,100.00
Contingencies	3,400.00
Total	$41,000.00

The additional cost where land must be purchased is $12,500.00, or total, $53,500.00. The total cost of the eight field ranges will therefore be $340,500.00.

The State ranges will be assumed as "company ranges" of the type already described as suitable for the completion of compulsory firing in two days. The same remarks as to camp, buildings, etc., apply as in the field ranges, except that they are designed for a company instead of a regiment. The area required in a level open site is 340 acres. Favorable sites will cause an average reduction in required area of at least 25%; the average area will then be 255 acres at an average cost of $30.00 per acre. The targets, butts and equipment will cost $300.00 per target.

Estimate of Cost of Company Range:

255 acres of land	$7,650.00
Nine targets and butts	2,700.00
Buildings, etc.	7,000.00
Clearing and grading	5,100.00
Fencing	1,200.00
Contingencies	2,350.00
Total	$26,000.00

It is not proposed that the United States shall aid in procuring club ranges, but to make the discussion complete, the estimate for the cost of a club range may be made in a manner entirely similar to that for the company range, and the cost of such a range containing 150 acres will be found to be $24,000.

The average cost of repairing and modifying existing U. S. and State ranges will be about $2,500 each. The total first cost to the United States for ranges will be as follows:

Eight field ranges	$340,000.00
75 State ranges (one-half cost)	975,000.00
Repairs, etc.	72,500.00
Targets, etc., for clubs and schools	900,000.00
Total	$2,288,000.00

or say, $2,300,000.00.

Musketry School for Officers.—The maximum number of students attending the school, allowing for vacancies caused by regiments on foreign service and failure of States and colleges to take advantage of the privilege extended to them would probably not exceed 200 in any one year, of which 100 will be assumed as coming from the Regular Army. Assuming that 10 per cent. of the number attending each year will take the theoretical course, it will be easily possible to graduate one class in the theoretical course and six in the practical course each year. The maximum number of students on duty at the school at one time would therefore be fifty, and accommodations and equipment for that number must be provided.

The first cost of establishing a school should not exceed $200,000. The annual cost would be the interest on $200,000, the depreciation, and expenses of transportation for all students, and of subsistence for the students from the National

Guard or schools. The total annual cost has been found to be $35,000.

Total First Cost:

Rifles	$5,250,000.00
Ranges	2,300,000.00
Musketry school	200,000.00
Trophies	30,000.00
Total	$7,780,000.00

Total Annual Expenditure:

Interest on first cost	$311,200.00
Depreciation and repairs	392,500.00
Ammunition	1,200,000.00
Transportation	2,000,000.00
Medals and prizes	35,000.00
Total	$3,938,700.00

Thus for less than $4,000,000 additional expended annually the United States can have at her disposal a body of 570,000 trained riflemen—a moderate price certainly to pay for national protection. Congress must, however, realize the necessity of prompt action. The present maximum daily capacity of the United States rifle factories, working three shifts, is 650 rifles, so under normal conditions it would take seven years to make the additional arms required in this scheme.

SYNOPSIS OF SYSTEM.

(1) The Regular Army is given as thorough a course as possible in range firing and field practice, complete ordinary ranges being provided at all posts where practicable, and a field range in each Department.

(2) The National Guard is required to take a compulsory practice at 200, 300 and 500 yards, and in skirmish firing. Supplementary range and field practice is also allowed and provided for. The United States makes an allowance of 100 rounds per man annually for compulsory practice, and an additional allowance of 100 rounds per man for supplementary practice.

The United States also contributes one-half toward building new and modifying old State ranges.

(3) The establishment of rifle clubs, preferably using the

service rifle, and under the control of the National Rifle Association, is encouraged in towns, colleges and schools by an allowance of ammunition from the United States. Military schools receive similar assistance.

(4) The United States service rifle is to be in time issued to all National Guard organizations, clubs, colleges and schools taking part in rifle practice; the clubs, colleges and schools being bonded to insure proper care and preservation of United States property. Standard targets and range equipment are to be issued to all under the same conditions.

(5) Uniformity in methods is secured by prescribing an annual course in firing for the Army, National Guard, clubs and schools. The affiliation of all clubs with the National Association is advocated in order to have a central controlling body which is necessary to efficient administration and would tend to introduce more uniform methods in all the clubs.

(6) A musketry school is recommended for the training of the officers of the Regular Army, National Guard, and selected students from schools having military instructors.

(7) In the United States Army, Post, Department and Army competitions are prescribed not only in range firing but also in field firing. The prizes include medals, trophies, and slight increase of pay for certain enlisted men.

State competitions similar to those of the Department are provided for, the United States donating a suitable trophy and medals to each State. State teams are also allowed to take part in the Department competitions, and State companies in the United States field competitions.

Each club and school are presented annually by the United States with a suitable medal to be competed for in a prescribed manner. At the end of the year, a cash prize of $5.00 per member firing the prescribed course is donated by the United States to the club which, in the opinion of the committee of twenty-one appointed by the Secretary of War, has done the most satisfactory and efficient work during the year.

Lastly, to encourage individual skill at large, a prize consisting of an annuity of $100 for life and a gold medal is to be shot for annually with the service rifle, the competition to be under the auspices of the National Rifle Association, and open to all citizens of the United States, and to representatives from the Army, Navy and National Guard.

(8) A body of trained riflemen, numbering 570,000, in

addition to the Regular Army is secured with an increase over the present authorized annual expenditures of less than $4,000,000.

CONCLUSION.

It has been assumed in this discussion that the cavalry and infantry are to be both armed with the same weapon. Should this assumption prove incorrect, separate competitions for the cavalry similar to those for the infantry must be provided, or the carbine be allowed a proper handicap whenever it comes into competition with the rifle.

Officers and men of the Regular Army must remember that their profession is that of arms, and they will be justly expected to attain a higher standard than can their brothers in the National Guard. In case of failure to attain such superiority they have only themselves to blame, and must expect harsh and justifiable criticism. Tactfulness, modesty, and ability are essential requisites in the regular officer who comes into close contact with volunteer troops; tactfulness, in order to avoid that friction which must almost invariably arise when two different systems working to the same end come together; modesty, for volunteers are quick to perceive and resent any unwarranted assumption of superiority, for they naturally remember that in the greatest of our wars, that between the States, the part played by the Regular Army, as a whole, was an inconspicuous one on account of its small size. The National Guardsman must, however, also bear in mind that the principal successes achieved in the Civil War were by volunteer troops who had been trained for a year or more in the best of all schools, experience, and who were therefore, to all intents and purposes, regulars, led, so far as armies and corps were concerned, by regular officers. Lastly, ability is essential, for without the knowledge of his profession which he is naturally expected to have, or the ability to put that knowledge to practical use, no officer can command the respect of his own soldiers or of the volunteers.

The system of rifle practice which has been set forth in this article, should appeal with sufficient force to the spirit of emulation, pride and desire for more material gain among our citizens and soldiers, and its requirements are certainly reasonable. For the rest—the development of patriotism, the approbation and interest of the people at large—we depend

on our public men, the educators in our schools, the public press, and the extension of the National Guard system until it is truly a National Guard, not only in name but in numbers and training. The reasons for the popularity, with the great mass of the inhabitants, of the French and German armies are not difficult to determine—the army with them is the people—"The Nation in Arms." With us it is a class, and often a much-abused one. To remedy this, the Army, the National Guard and other citizens must learn to know one another, must fraternize more, and work together to the same end—the building up of the Nation's military strength to a high state of efficiency without the necessity of resorting to great standing armies like those of Europe.

In a more material way, the railways may greatly assist by granting free transportation or special rates to the National Guard, clubs and schools, when their members are traveling on duty connected with target practice. In considering such a proposition, the companies should recall that both the National and State troops have been more often called to duty on their account, during time of peace, than for any other one cause.

The assistance of the press must be secured; its influence with the people can effect a great revival of interest in rifle shooting, and through it, the people and Congress can be persuaded as to the advisability of enacting the necessary laws for establishing a suitable system.

So let us appeal to our newspapers to bring before their readers the need of preparation for national defense; to our educators to inculcate the ideas of patriotism and civic duty in their pupils; to Congress for the necessary legislation to put the scheme herein outlined into effect.

It is also earnestly urged that a larger proportion of citizens connect themselves with the National Guard. In the rifle clubs, a man can learn to shoot, but there are many other duties that a soldier must perform, and it is only by actual performance that these duties are to be learned. With the increased advantages and facilities due to recent legislation, and by participation in the annual maneuvers and service with regular troops, the citizen-soldier now has an excellent opportunity of rendering himself fit for active service by learning not only to shoot but to march, to execute movements by rail, and all those manifold duties, the care of health, etc., the knowl-

edge of which can only be acquired by actual experience in field service.

To those who insist that eternal peace must be our national aim the reply may be made that there has been war once every thirty years in our history as a nation, and there will continue to be war as long as nations have ambitions to be curbed or to be accomplished, as long as selfish national ends can be attained by violent means, and as long as there are still great principles to be established or wrongs to be righted. More good, and more evil, too, perhaps, has resulted from war than from any other human institution, but good or evil, it has existed from the beginning of history, and will continue to the end, and when it comes, that nation will be victorious whose fighting units are most numerous, the best armed and organized, and the most thoroughly trained for the struggle.

E. F. D., 22.

Honorable Mention Essay.

HOW BEST TO PROMOTE RIFLE PRACTICE AMONG OUR COUNTRYMEN IN TIME OF PEACE AS A PREPARATION FOR WAR.

By Captain PAUL B. MALONE,
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FOUR hundred years ago a narrow strip of land along our eastern seaboard was occupied by white colonists from Europe. All the rest of the vast domain of the present United States was the land of savage man and wild beast. Into this domain the white man gradually pushed his way, and behind his advancing frontier all the advantages of civilization grew apace. Log huts separated by wide intervals along the most advanced line were the ancient outposts of our present civilization. The struggle for existence along that line was decided by the arms of the antagonists, and before the white man's superior rifle the less strongly armed Indian was doomed to inevitable defeat. Upon his conquered fields there grew up a nation of expert riflemen because dexterity in the use of the rifle was as necessary as food for existence.

Scarcely had this nation extended its frontier beyond the coast line when its strength, acquired in savage warfare, was pitted against the most powerful nation of all Europe; yet from Bunker Hill to Yorktown the expert instinct of the woods-taught American slowly won for us the Independence we now enjoy.

This was essentially the work of our riflemen.

At the close of the War of 1812 the Battle of New Orleans demonstrated that our riflemen had lost none of their dexterity. The war with Mexico was decided essentially with the same weapon, and all the conquered territory and that secured by the Louisiana Purchase were won to civilization by our constantly advancing skirmish line of hardy frontiersmen. Upon the conquered soil great cities grew up, and in the North trade, instead of the rifle, became the means of securing those advantages whereby the fittest might survive; whereas, the

men of the South, still enjoying the open country life, preserved those arts which in the opening days of the Civil War contributed so materially to the disaster of Bull Run, and made possible one of the greatest wars in history. Superiority of rifle fire was the determining factor in the early battles of the Civil War until the North had learned its lesson, and had secured a well but artificially trained army of riflemen.

During the long peace that followed, knowledge of the rifle was lost to the American race, except in the little Regular Army and among a small population in the West where occasional Indian outbreaks still made it necessary to preserve a knowledge of the art of self-defense.

The history of the South African Voortrekker is in many respects closely analogous to that of our own frontiersmen. From Cape Town the burgher trekked over the South African veld on a constantly expanding battle line, until the rifle had wrested the great territory of the Transvaal from the savage aborigine. Widely scattered over the lonely veld, the burgher learned to stalk his prey, or to meet and kill his savage foe in the defense of his home. To level his rifle with unerring aim at a living enemy, man or beast, was equally the inborn instinct of American frontiersman and South African burgher. For the latter, the series of triumphs, Bronkhurst Spruit, Laing's Nek, Ingogo Heights and Majuba Hill, tell the emphatic story of his acquired prowess. Majuba was the culminating triumph of the Boer system. "The skill with which 200 men scaled a great mountain held by more than twice their number of trained soldiers, and shot them down like a herd of panic-stricken deer, will always claim the admiration of all students of tactics . . . . . the hours of intermittent sniping, during which the Boers steadily worked their way up from gully to gully, from boulder to boulder; their sudden appearance at unexpectedly close range, and the rapid, murderous fire kept up on the crest line of the sangars; . . . . . have been repeated not only once or twice, but many times, during the present war. The British loss at Majuba, including prisoners, was over 50%; the Boers lost two men." (The *Times* "History of the Boer War.")

The Majuba of 1881 was almost duplicated in the recent war when Christian DeWet with 300 riflemen actually in battle line attacked over 1000 British Infantry on the top of Schrengula Hill, killed or wounded 180, and captured the entire com-

mand, with a loss, according to his own statement of nine killed and wounded. At Spion Kop the story nearly repeats itself.

Each of these terrible catastrophes to the British arms was due to the Boer's superiority of rifle fire, combined with an appreciation of cover acquired by his life on the open veld. These are examples which call loudly to our people to listen and beware. One might emphasize the illustration by tracing in history the simultaneous development of marksmanship and use of cover as factors in the greatness of nations, but to those who can be convinced, the above illustrations suffice. The most casual reading of the History of the Boer War must profoundly impress the student with the truth that the development of an aggressive individual marksman, who understands the use of cover, is the great problem of the hour for the subordinate officers of the line. For the purposes of this paper only the development of marksmanship on such a scale as shall fit our people for the next great war, can be considered.

The conditions surrounding the problem should first be appreciated.

Our frontier has disappeared; the rifle has gone from the home; firearms of any kind are to be found in the possession of only a few, and the majority of these know nothing about their use. Not more than 200,000 of our population of more than seventy-five millions, know how to handle the rifle and not more than half of these are expert in its use. Clearly we have ceased to be a nation of riflemen. The fact that a select detail from our vast population is capable of winning the Palma Trophy is no contradiction of the general statement, but merely evidence of what results might be secured by universal training.

Moreover, we have passed beyond our safe, conservative boundaries, and have invaded hostile territory. To-day the principles which America represents are "camping in every trail, mining in every claim, pressing across every frontier," and just so sure as the aggressive military policy of Russia on the northern frontier of China is abrading the skin of interested nations to dangerous soreness, so the aggressive commercial policy of the United States, advancing the Republican flag in the face of retreating monarchies, is no less a constant challenge to combat. The fringe of colonists which four hundred years ago, clung desperately to the margin of the sea,

has expanded into a nation which dominates a hemisphere, controls the union of the oceans, stretches its arms from the Caribbean Sea to the shores of China, and there raises for mankind the strongest voice among the nations of the world. All this prestige, all this power, has been initially won by the rifle, and now that the position with all its dangers has been won, the knowledge of how to defend it is rapidly passing from our people. We should not overlook the fact that the position this country enjoys is a concession to our size and latent possibilities, not an acknowledgement of preparedness for the struggle which the position invites.

Our history has been one of territorial expansion. If history repeats itself, it is folly to assume that no more territory will be acquired. It is greater folly to think that monarchies contemplating future history of Republicanism from the records of the past 400 years will accept the further aggressions of the Republican Champion as involving no threat to their national integrity. That we must either abandon our advanced positions or fight for their maintainance is the publicly expressed thought of many of our deepest thinkers of the day. The mere stalwart growth of Americanism on hostile frontiers will precipitate a struggle in order that the fittest may survive. Then, sooner or later we must fight. War is not to be sought, but if history is a teacher, war must be accepted, not as a vague, future possibility, but as the inevitable development of regrettable facts. It is, in my opinion, with this view of the situation that a solution should be attempted of the problem presented in the head-lines of this essay.

The conditions necessarily implied are that men numbered by the million physically fit for the battle-field shall be rendered as proficient in the use of the rifle as our social and economic conditions will permit; that this result must be accomplished with a merely nominal expenditure of money by the General Government. Emphatically, all plans must be rejected which accomplish this result by a grand expansion of the standing army, or which secure a perfect accomplishment by imposing a great burden of expense upon the Central Government. The system must reach the general public, not confine itself to a special class. It should operate through organizations already in existence, not attempt to create new and expensive machinery requiring the installation of separate motive power.

That organization which is co-extensive with the limits of the country, which reaches every grade of society, which controls the daily conduct of 17,000,000 of our population, is the school system. It would seem clear that any comprehensive scheme for developing a nation of marksmen must consider the proposition of instructing this rising generation of school children, and must provide for fostering and preserving the knowledge thus acquired so long as the individual remains available for military service. It is the purpose of this essay to examine into the methods by which this might be accomplished.

The subject naturally divides itself into two parts:

(1) The method of instructing the school children.

(2) The method of extending the instruction to the general public.

These propositions may be separately considered under their respective heads.

(1) THE METHOD OF INSTRUCTING THE SCHOOL CHILDREN.

Number available for instruction.—The population of the United States may be taken at 76,000,000. One-eighth of these, or nine millions approximately, are between the ages of 12 and 20 years. Seven millions of this class are receiving instruction in the various schools of the country (all classes of schools are here considered) and about one-half of the last number, 3,500,000, are boys.

It would be manifestly useless to instruct those boys physically unfit for military service, or to continue the instruction of those hopelessly deficient in the use of the rifle. Moreover, it would be impossible, at the present time, to force instruction upon unwilling students, or to require those whose religious principles preclude the defense of country to receive instruction which would fit them for such defense.

It would be a fair but conservative estimate to fix 1,000,000 boys as the maximum number available for instruction in the use of the rifle.

Cost of instruction.—Assuming it possible to fire ball cartridges, one round per boy per year would cost $20,000. It is clear that any system which requires the Government to merely furnish adequate ammunition on this basis would be overwhelmed by public opposition as too expensive. The plan must require each person to defray the expense of his own

ammunition, make the work a matter of privilege, free it as much as possible from the appearance of professionalism, and yet secure the results.

It will be clear that while rifle practice with ball cartridges is impossible in the school, gallery practice could be conducted with excellent results and the expense could be borne by the Government.

Construction of sites.—Not only is gallery practice the only possible method, but it is clearly a possible and a sufficient method. There is no school whereat such a gallery might not exist. In the country they could be constructed for the cost of an iron disk, or improvised without cost from the materials at hand. In the great cities which will supply the great masses of recruits for our next war, objection may be raised that already the schools are overcrowded, and that it would be folly to lessen space for legitimate instruction by the construction of galleries wherein to inspire in the rising generation the savage instinct of war. Neglecting the objection except as to the practical feature, inadequate space, it may be said that rifle practice and all that it stands for is an essentially out-door exercise. Therefore place the gallery on the roof in the wide open air. A gallery of ten to twenty targets might be placed on the roof of many of our great public schools, and it is the only place in many of them that it could be placed. Here 100 boys during the recreation hours might receive instruction which in the hour of the nation's need would make them the strongest defenders of the flag.

The enactment of a law requiring all schools to be finished with a flat roof, and provided with galleries, would dispose of the subject without expense to the General Government, and would not appreciably increase the initial cost of the building.

City schools with sloping roofs could be provided with galleries, but at greater cost and with less effectiveness.

Range and rifle.—The greatest practicable range should be secured, and only the service rifle should be employed. The Government arsenals are constantly filled with cast-off rifles, forced to retire because of the superiority of some new model possessing some slight improvement in detail, but not in principle. This refuse material might, at practically no cost, be placed in the hands of the rising generation, and would serve equally as well as the latest models to secure expert knowledge of the rifle.

Instruction.—Competent instruction presents, at first sight, the greatest difficulty. It could be secured at the most needed points by our corps of retired soldiers, some of whom are past masters in the art of marksmanship, experienced disciplinarians, and thoroughly competent instructors. The light work involved could be performed even by a crippled soldier, but many retired men are capable of many years of hard and faithful service. While performing this duty they should receive full pay. The number available is wholly inadequate. The first duty of those employed would be to teach the teachers. Moreover, these teachers should be required to visit some designated rifle range during each season of public practice, to be discussed later, and take the course of instruction as there taught. In a very short time many enthusiastic teachers would be secured who would find the work of instruction a pleasant pastime.

Assuming a school provided with its proper equipment, and possessing a competent instructor, the General Staff, under whose supervision this entire matter would naturally fall, would issue general advisory instructions suggesting the limits of the target season and regulating the distribution of material. The instruction should begin at eight o'clock in the morning and last until five minutes before the assembly of the classes. It should be resumed during the spare time available after lunch, and should continue from the dismissal of the classes until five o'clock. Only those physically fit for the service should be permitted to attend the practise. All these should be organized into companies with the necessary officers, and an Adjutant should be appointed for the entire command, whose duty it would be to furnish the instructor with a detail of boys designated daily for practise. These companies should generally not attempt to be uniformed.

The boys should be carefully instructed in the mechanism of the piece, the care of the rifle, and in pointing and aiming drill preparatory to a regular course on gallery practise conducted as nearly as possible according to the Small Arms Firing Regulations, U. S. Army. They should be classified according to their work, permitted to wear the insignia of their class, and no boy should be appointed an officer of his company unless entitled to wear the badge of marksman. Every effort should be made to make the holding of a marksman's badge an occasion of honorable distinction among his classmates.

Let any full grown man look back upon his youth and ask himself if he would not have hailed with joy and enthusiasm the opportunity of handling the service rifle and of deciding and contesting supremacy with his fellows. Then, in view of the discipline which teachers are able to maintain in the class, and that the construction of the gallery might be so regulated as to admit only a manageable number at one time, it would seem that one might reasonably assert that this plan would meet with success.

If success can reasonably be assumed for this plan, how much greater assurance of success have we in turning to the military schools where the best military talent is available for instruction, and where very substantial rewards may be offered for military efficiency which should be made to include proficiency in rifle practise as one of its most important requirements. In many of these institutions a complete course in target practise is possible. Commissions as second lieutenant are now available annually to six students of these schools whom the Chief of Staff reports as most fit. It should be further provided that no person should be reported as fit who has not qualified as marksman on his school range.

The introduction of these ideas among the boys of this country would inspire an interest in things military, would stimulate an admiration for high physical standards, and would disseminate a knowledge of the military profession among the people. A boy thus trained would produce a man pre-disposed to perfect his knowledge on the public ranges, and when war comes upon us he would hasten to the support of our arms, bringing with him the fundamental knowledge—how to use the sights of a rifle, and that knowledge wins battles.

Accepting the general feasibility and success of this plan, it then becomes necessary to consider:

(2) THE METHOD OF EXTENDING THE INSTRUCTION TO THE GENERAL PUBLIC.

The adult population may be divided into—

(1) The Regular Military and Naval Forces and Marine Corps, which provide annually for the instruction of about 100,000 men.

(2) The National Guard, which provides instruction for about the same number.

(3) The great civilian population, the grown-up schoolboys whose instruction has been initiated in the schools.

The instruction of the regular land and naval forces and the National Guard has been brought to a fairly high standard of perfection. It is only necessary to proceed with great energy on lines already marked out, maintain the system of competition and rewards, and encourage international contests. But it should not be our policy to secure a few experts by unnecessarily refining the instruction of these troops. Rather, we should strive to secure a vast number capable of national self-defense. It is therefore illogical to suggest improvements in the system of instruction of the organized forces, which will form but a small fraction of the future armies, when it must be admitted that we are a whole nation ignorant of the fundamental principles of rifle practice.

It is therefore with the instruction of the great civilian population that this article has to deal.

Assuming the schools of the country organized as outlined, then in eight years from the date of organization, 1,000,000 men above the age of twenty years would have received instruction in the principles of rifle practise. It becomes necessary to provide means whereby this formidable army may preserve and perfect the knowledge thus acquired. This might be accomplished by—

(1) Throwing open all the target ranges of the Regular Army and of the National Guard to the use of the general public.

(2) By constructing immense ranges adjacent to the great centers of population, and conducting public practise thereon under the supervision of the Regular Army.

(3) By extending the work of the National Rifle Association, under the patronage of the Government, to the organization of branches in every town in the country.

(4) By encouraging the organization of private shooting galleries in the big cities.

Each of the suggestions may be considered under its respective head.

(1) THROWING OPEN THE TARGET RANGES TO THE USE OF THE PUBLIC.

Let us consider the target range at Fort Niagara, N. Y., adjacent to the great city of Buffalo and the neighboring cities

of Rochester, Lockport, Niagara Falls, etc. The range possesses now, I believe, eight targets, and will therefore permit sixteen men to work at the same time. Without going beyond the reservation, the number of targets might be increased to twenty or twenty-five, thus permitting forty or fifty men to practise at the same time. The season might be opened in May and closed in November, thus giving practise during seven months in the year at such times as would not interfere with the work of the regular garrison. A company of the garrison would be detailed to supervise the work and maintain discipline. A building adjacent to the range would be converted into a storehouse for ammunition, and there the civilian might purchase at cost price from a member of the Ordnance Department the ammunition necessary to the practise of the day. He would also receive a score card with which he would proceed to the firing point and receive his rifle. Starting at the 100-yard point, he would be taken through the regular course according to the Firing Regulations. His score would be marked on his card and signed by the scorer, and at the end of the season those who had finished the work would be classified, their names and scores would be published in the public press, and they would be entitled to wear the badge of their classification.

The ranges of the National Guard might be used in the same manner as that outlined above, by detailing a company of Regular soldiers to supervise the practise throughout the season.

Opening of new ranges.—Having once demonstrated the success of this plan, it would then be economy on the part of the Government to construct immense ranges near the great cities, and control the instruction of the public by the Regular Troops.

THE EXTENSION OF THE WORK OF THE NATIONAL RIFLE ASSOCIATION.

In the extension of this general plan the National Rifle Association will be found a valuable auxiliary. It is the quasi-military intermediary between the War Department and the general public. While destroying none of its independent character, it should be brought to a certain extent under the patronage of the Government. Through it the disjointed efforts of various organizations to instruct in shooting either

for fun or for war, might be unified and harmonized, and thus made to pursue a single policy with a single objective. This might be secured by obtaining the consent of the National Rifle Association to an article in its constitution whereby the Secretary of War would become, by virtue of his office, President of the Association, and whereby the members of the General Staff, and the Department Commanders would become, for the same reason, members of the Association.

For the purpose of conducting its business in harmony with the General Government, the Association could be invited to divide the country into departments co-extensive with the military departments now existing, and each department thus established should have a President. The member of the General Staff on duty at Department Headquarters would form the connecting link between the General Government and the public. He would operate through the President of the Department and report direct to the Division of the General Staff which is charged with all matters pertaining to the Militia.

It should be the specific duty of the Department Staff Officer to co-operate energetically with the President of his Department to secure the establishment of Rifle Clubs in every town in his Department. Members of the G. A. R., honorably discharged soldiers and sailors and veterans of the recent wars should be secured as members. Every discharged soldier should be required to report to the Rifle Club nearest his home and be enrolled as a member, and each Club should be required to keep a roll of its members, thus furnishing a means of keeping in touch with the trained material that drains constantly from the regular ranks.

A simple set of rules would govern the organization of each Club, and the rules would be the same for all, and in the framing of these rules the Secretary of War would exercise a friendly but not a governing influence.

A Rifle Club having been established under satisfactory leadership, rifles and all necessary literature on rifle practice would be furnished free by the Government, and ammunition would be sold to the Club at cost price. It should be the object of these clubs to conduct, as far as practicable, a regular course of target practise, but the work would be popularized by the introduction of "turkey shoots" at regular intervals.

At Potsdam, N. Y., "turkey shoots" are held weekly. They are enthusiastically attended. Five cents per shot are charged, and three hits out of five at 300 yards firing off-hand at a circular ring eight inches in diameter wins a turkey for the marksman. The proceeds more than pay for the turkeys.

To secure the best results the prize should not be limited to the turkey. Horses, cattle, hogs, and other farm animals, farm implements, wagons, machinery, etc., rifles, shot guns, watches and all kinds of jewelry, should be shot for, over a course which should include at least 600 yards. Each man's score should be made up and the relative standing of the members of the club should appear in the public press.

A report of the season's work would be forwarded through the President of the Department to the Department Staff Officer who would make such a consolidated report as circumstances might require to the Division of the General Staff in charge of Militia matters.

Every effort should be made to establish a friendly rivalry between adjacent clubs, and matches between them should be encouraged as much as possible. Such methods formed a part of the Boer system of rifle training previous to the recent War, $30,000 being expended annually for the ammunition required in these meets.

The Department Staff Officer should visit as many of the clubs as possible, officiate in the distribution of prizes, and strive to create the feeling that the Government looks with high favor upon the efforts of the clubs.

The work on these local ranges could not be conducted throughout the entire year. Each club should sustain the interest during the winter season by conducting a shooting gallery in which contests would be held at regular intervals with the service rifle. The Club should likewise encourage the organization of private shooting galleries.

Moreover, it should be an article in the Constitution of each club that each member thereof shall use all due influence to bring about the establishment of shooting galleries in any other club of which he is a member. Parallel to the bowling alley of every private club we should find a shooting gallery, and the rifle and pistol tournament of the club should appear with the same degree of regularity on the winter program of events as the tournaments in bowling, pool, and billiards.

Recapitulation.—In the above outline, the effort has been

made to trace out to rather minute details a system by which many millions of men might be trained to the use of the rifle. The point is emphasized that in order to get a working system the War Department must be held responsible for the results, and that the means by which the masses may be reached must be fixed by no hard and fast formality. The body on which the responsibility naturally falls is the Division of the General Staff charged with Militia matters. As subordinates of the Secretary of War, the President of the National Rifle Association, they reach the masses through the Department Staff Officer by virtue of their common membership in the Association. As the last military link in the chain which connects the power of the War Department with the future soldiers of the Republic, the Department Staff Officer is a man of great importance. It will be for him to secure the continuity of purpose of the War Office and the fulfilment of its plans without the imposition of harsh or offensive rules, or the assertion of military prerogatives. It is he who from the rolls of the Rifle Clubs secures the names of retired soldiers to supply the schools of his Department with competent instructors, and it is he who will have in his hands the data necessary to the rapid mobilization of the great army of trained shooters who will be gradually developed by the prosecution of this plan.

That effective work can be secured by the training of the gun-rifle clubs has already been demonstrated in history. The Boers accepted it as one of their training schools, and the British used the trained product against the Boers. During General Buller's advance to the relief of Ladysmith, Sir Thomas Murray organized 150 members of a rifle club, and did excellent work along the Tugela River until relieved by the arrival of regular troops.

This little illustration speaks volumes for the possibilities of a plan prosecuted with the earnest purpose not to accept grudgingly the service of such material, but rather to train, mold, develop and use to the fullest extent every man made possible by this system. Upon the declaration of war a fairly experienced marksman for every rifle in the hands of the rifle clubs (and there might be a million) could march immediately upon a rendezvous previously selected and designated by the General Staff, and there present himself for examination and enlistment.

In the development of this plan, as little constraint as pos-

sible should be placed on the individual marksman, except that it should be emphasized that he must get as near to earth as possible. Instruction in every position should be insisted upon, but more attention should be given to the prone position than to all the others combined. Skirmishing should form the principal feature of the work, and, in advancing, the upright position should be prohibited, except where complete cover is furnished by the terrain. THE MEN SHOULD BE HABITUALLY REQUIRED TO ADVANCE BY CRAWLING.

The type of man which this instruction should aim to secure is exemplified in the old frontiersman, the Civil War veteran or the modern Boer. They are all products of nearly the same environment, except that the Boer has learned that use of cover which the defective weapons of his time permitted the old frontiersman to ignore, the Civil War veteran to but partially comprehend. Unhampered by ancient tradition, the Boer was free to develop to the fullest the efficiency of his rifle and protect himself against the weapon of his enemy. To him the British soldier on the veld presented no problem essentially different from a dangerous animal which threatened his life. He recognized the same necessity for a cautious, crawling approach, the same necessity for rapid flight, the same necessity for an accurate shot. His anxiety was to see and not be seen, to hit his mark and escape unhurt. Not being aware that volleys across the flat desert sands of Egypt were effective against dense masses of savages, he did not waste his ammunition in volleying at a thin line of the enemy lying concealed like rats among the crags of a kopje; nor did the rhythmic motion of the breech-blocks in "load" appeal strongly to him as a means of arresting an attack. Untutored in the cast-iron rules devised to fit other fields than those of the South African veld, his whole intelligence was called into the solution of the problem before him in fact, not in theory. Leadership in the actual fight was but nominal. Conclusions as to the proper course of action were the spontaneous inspirations of the fighting line, and unconsciously to the actors, they were, by their conduct, expounding what would seem to me the axiomatic truths of the modern battlefield:

(1) That the shock of heavy masses as a battle line formation is a method of the past. It has been replaced by the fire of the magazine rifle.

(2) That rifle fire is not to cover an attack. It is the attack.

(3) That the bayonet of the future is a loaded magazine.

(4) That men must advance to the attack by crawling.

These conclusions are pertinent to the matter at issue only as emphasizing the fact that the supreme weapon of the day is the magazine rifle; that the knowledge of its proper use is inseparable from a knowledge of the use of cover.

The trained soldier can serve his country to no better purpose than by disseminating a knowledge of these fundamental principles of national self-defense whereby the evil consequences of an inadequate standing army in time of peace may be minimized in time of war.

A. CRAWLER.

THE ARMY-NAVY MANEUVERS OF 1903, AS SEEN FROM FORT WILLIAMS, WITH SOME COMMENTS ON THE RULES.

By Captain JOHN STEPHEN SEWELL, Corps of Engineers.

THE RULES.

PARAGRAPH 29 provides that a cable station may be permanently disabled by cutting the cable. This seems a little extreme for a cable service confined to the limits of the harbor. In any event, if the defense can and does re-establish the cable, under conditions as they would be in war, it is thought that the station should be restored to use.

Paragraph 41 provides that fire from calibers of six inches or less shall not, by itself, count against the life of the targets. It is suggested that all classes of fire, except musketry, should count against the life of unarmored vessels of all kinds, and certainly in a battle, five-inch and six-inch shots would lessen the life of any ship except a fully armored battleship. It is thought also that if any gun can lessen the life of a land fortification, the five-inch and six-inch would have a similar effect. It is also suggested that a battery of disappearing guns is as impossible of destruction by gun fire as a mortar battery. Excavation cannot be accomplished by picks alone, and gun fire supplies no shovels.

It is suggested that the "phases" be more distinctly marked than was the case at Portland; also that a sufficient minimum time elapse between phases, to permit the personnel on both sides to obtain much-needed rest. The maneuvers at Portland were much more exhausting than actual hostilities would have been. Many officers hardly got an average of one or two hours' sleep per day during the entire period.

It is also thought that during the interval between phases, the hostile fleet should retire to a point entirely beyond range of both fire and vision. At Portland, for two successive days, the fleet lay at anchor at a point within range of mortar fire from one of the forts. Under these circumstances, it is a

little hard to say when the defense must refrain from firing, and when it is free to score points at long range. Thus, the fleet was at anchor one morning within range of the mortars, while the landing operations on Long Island seemed to be still in progress; certainly, the mortars would have sunk the fleet under such conditions in actual war.

The rules do not provide for mining and countermining very fully—more especially the latter. It is suggested that in countermining operations the attack should be required to plant actual countermines and buoy the channel supposed to be obtained; that if dragging is resorted to, the test of success shall be the indications in the casemate on shore. As meddling with a torpedo with a boat hook, or with a drag not supported considerably in rear of the dragging party, if successful, puts an end to the party as well as the mine, a small boat should be considered competent to destroy one mine and no more; and that only by exploding the mine with its own current from shore. No boat not provided with a derrick could lift a mine and cut it loose. Should the attack raise the mines one at a time, with suitable apparatus, and cut them loose, the electric cable should be actually cut, unless it is specifically desired to retain the mines for later phases.

The defense should have credit for any damages actually made good in the mine fields during the period of hostilities; for maneuver purposes, mines fired by contact or judgment in one phase ought to be considered good for subsequent phases, if the vessels put out by them are to be similarly resuscitated.

The time allowed by orders for submitting reports on maneuvers is hardly long enough for the best results; a little time is required to digest one's observations before reaching final conclusions.

The record, as determined from observations at Fort Williams:

FIRST PHASE.

(Night of August 25, 1903.)

At midnight, or a few minutes earlier, the tug *Peoria* appeared under the searchlight at fairly close range; the night was thick and foggy and conditions were favorable for concealment. The *Peoria* appeared about east from Portland Head Light. This locality was largely masked from observa-

tion at Fort Williams by the beam of a light controlled from Fort Levitt. The *Peoria* was fired at from Levitt, and a red star sent up from there about 12.10 A.M. seemed to indicate that the umpire at Levitt had ruled her out under Par. 33 of the rules.

Shortly after the *Peoria*, the *Scorpion* also appeared. About 1.00 A.M., the *Scorpion*, from a point about 3000 yards east of Fort Williams, started in. She was fired at by the smaller calibers at Williams, and returned the fire when at close range. She was ruled out by the umpire under Par. 33 of the rules, after receiving enough fire to put her out two or three times, under the rules.

She went on into the harbor, exploding a mine by contact as she passed over the mine field.

Within the next two hours two torpedo boat destroyers also ran in through the main ship channel. Both received enough fire to put them out before they reached the mine fields, but they were not ruled out as scouts because it did not seem probable that such was their mission. A group of mines was fired at one of the destroyers as she passed through the field. The *Scorpion* and the two destroyers afterwards came out with their running lights burning.

Battleships east of Portland Head Light were reported by Levitt as early as 2.25 A.M. They were not visible at Williams because of fog and smoke from the guns at Levitt, which had opened on them, and also because of the searchlight beam above referred to as masking this space from Williams. About 4.00 A.M., however, the battleships were definitely made out from Williams at a range certainly exceeding 4000 yards. Shortly afterwards they started in, in column, as follows: *Kearsarge*, *Illinois*, *Alabama*. All guns opened on them at about 3600 yards. The ships did not reply until they were considerably closer. They ran in past the forts. They were all tracked through the mine fields; the *Kearsarge* went through the opening left by the group fired at the destroyer earlier in the night. It is understood that this group was fired at the destroyer to demonstrate the efficiency of the mines to two of the naval observers, and with the understanding that the group should be considered effective for the remainder of the phase. It was impossible to tell whether the *Kearsarge* struck or not, but it is almost sure that she did, for she passed squarely through the group. The *Illinois*

struck a mine and exploded it. The *Alabama* was fired at by judgment when within effective range of a group, in which, however, two mines had already been fired by contact. In an actual battle, it is almost certain that the mines would have destroyed the *Kearsarge* and *Illinois*, and seriously injured the *Alabama*.

During the night a number of small boats were discovered in the mine fields and were all put out by gun fire. It is not certain whether countermining or dragging operations were attempted, but if they were, they were wholly inadequate and ineffective.

Neither of the destroyers which had run in earlier in the evening used her guns at all.

The *Peoria* followed the battleships in and was fired upon, but did not return the fire.

SECOND PHASE.

This apparently consisted of operations against the works and stations on the left flank of the line of coast defense during the forenoon of August 26, 1903. Williams was not engaged. During the day the fleet lay at anchor in water apparently well within mortar range from one of the other forts.

THIRD PHASE.

Began about 10.20 P.M. Consisted of demonstration by cruiser division against the forts, so far as could be determined from Williams.

The vessels were discovered by Williams at about 6400 yards range east of Portland Head Light. Fire was opened on them and they returned it. One of the vessels, apparently either the *Prairie* or *Yankee*, made some use of her searchlight during this phase, but for what purpose could not be ascertained. Three destroyers ran in through the main channel and received enough fire from the smaller calibers to put them out. They did not return the fire. In coming out of the harbor later on, one of the destroyers turned across the channel over part of the mine field, and remained there for some time. Her object was not apparent, as she did nothing to the mines.

FOURTH PHASE.

Consisted apparently of operations directed against other fortifications. Williams was not engaged. During the fore-

noon and early afternoon the fleet again lay at anchor at the point described above, within range of the mortars.

FIFTH PHASE.

Began about 4.45 P.M., August 27, 1903. Regular frontal daylight attack, in two divisions, one of battleships and one of cruisers.

The land guns opened some time before the ships began to reply. It was not possible to determine the exact time when any of the ships opened on a particular fort or position.

SIXTH PHASE.

Forenoon of August 28, 1903. Landing operations in the vicinity of Two Lights. Fort Williams not engaged, except to fire upon two cruisers and three destroyers which emerged from behind the point of land at Two Lights for a short time.

SEVENTH PHASE.

Began 9.50 P.M., August 28, 1903. The *Scorpion*, *Topeka* and several other cruisers, together with several destroyers, appeared east of Portland Headlight and in the vicinity of Ram Island. They were fired on from time to time by Williams and Levitt. One destroyer reached the inner harbor and anchored for the night, but it is believed that she entered by another channel than the main one. It is thought that no craft, large or small, of any description, got through the channel in front of Fort Williams without being discovered in time to be put out by the guns, under the rules.

When the *Peoria* was first discovered on the first night she had her sails about half-spread and hung about in the beam of the searchlight for a long time, in an inexplicable manner. She presented a very queer appearance, but her object was not apparent. She did nothing to wear out the defense, but on the contrary, made them doubly alert. The *Scorpion* also hung about in the same manner for some time after her first appearance. Neither vessel was close enough in to get information of value, and they simply served as a warning to the defense that something was impending.

COMMENTS ON POINTS OF PROFESSIONAL INTEREST.

It is suggested that searchlights should actually disappear during the day; masking alone is not sufficient. In the

defense of Boston, during the war with Spain, the searchlights were lowered out of sight during the day by means of a simple timber incline and a hand winch. It is probable that there was not time for this at Portland, but it is certainly not impracticable anywhere. A small parapet could be built to conceal and protect the light.

At Portland the bursting of a water tank threatened to put one light out. At another, the engineer and fireman gave trouble, and at all of the outlying lights there was difficulty in securing enough water. It is suggested that with central stations, both commercial and military, within easy reach, it would be simpler and more certain to run the lights with rotary transformers. This would also do away with smoke from the searchlight power plants. The lights should be arranged however, for both methods of operations.

The results at Portland were a vindication of the usefulness of searchlights for both searching and illumination. They were well disposed, well handled, and gave surprisingly good results in both clear and foggy weather. There were a few faults of location and operation, but none that could not have been eliminated had there been time for proper drill before hostilities began.

The targets were invariably picked up and identified for some time before the firing began, as the responsible commanders always took the time for accurate work. During the interval when a target was under observation, and not under fire, the searchlights were allowed to slowly pass her, on both swings, in a way that must have made those on board feel that they were probably undiscovered. As such a feeling would cause them to hold their fire in an actual fight, it is thought that this feature in the use of searchlights may be worthy of development. It was noticeable at Portland that there was nothing spasmodic or nervous in the handling of the lights, even on the first discovery of a target. Combined with the trick of illuminating the target only at intervals, until fire is opened on her, it might lull an enemy into a fatal sense of security. When the target was once illumined for firing purposes the results at Portland were all that could be desired. She stood out with perfect distinctness, obscured only by the smoke from the guns. The results would have been more definite, however, if the vessels had been painted gray, so as to make them as inconspicuous as possible. It is thought

that they would have been discovered almost as soon, judging from results with torpedo boat destroyers which were painted gray. But it would have been more satisfactory if this could have been definitely determined.

It was quite evident from an examination of the batteries, position finders, etc., from the sea, that all slopes and crests should be broken up and covered with the irregular underbrush of the vicinity, whether there was a background of land and trees or not. The day of beautifully sodded and well kept slopes on our fortifications is past. D. P. F. stations should have earth slopes right up to the sill of the opening; the height above the opening should be a minimum, and if the roof were so arranged that bushes could not be planted on it the results would be still better. In New England the bayberry and the huckleberry and its allied species are suggested as the best things to plant for concealment on all the outer slopes. They should be allowed to grow high enough to conceal the interior crest from the deck of a vessel, though not necessarily from her tops.

Artillery officers say that the D. P. F. is very accurate on the azimuth of the datum point, but not so accurate on other azimuths. It is suggested that it be adjusted for datum points on two ranges, differing in azimuth, as nearly as may be, by 90°.

It was noticeable that every one instinctively used the D. P. F. in preference to the horizontal base. Under these circumstances, it is thought that this instrument should be made the subject of careful study, with a view to eliminating all sources of error that it may now contain due to defective design, workmanship, or materials. But the Artillery Arm should use both systems, nevertheless, even where the conditions favor the D. P. F., for in many cases a horizontal base may be the last resort.

In the matter of communications, every one instinctively turned to the telephone. Some of the telephones remained in good order, and some gave trouble; the conclusion is fair that all could be made thoroughly reliable with sufficient time and attention devoted to their installation. The telephone requires a recorder to reduce important messages to writing. Possibly enforced use of the telautograph might prove it superior to a telephone and recorder, but this did not appear at Portland. A crying need of the telephone service is trained

operators. It was astonishing to see how inaccurately orders were repeated; the enlisted men on duty were often unable to repeat a single sentence verbatim, or even to convey its essential meaning. If the telephone is to be used, a certain class of men must be specially trained for it.

The submarine mines, at least those under the guns, should be a part of the fire command, as well as the guns. The converted yacht *Scorpion* exploded a mine by contact, after receiving enough gun fire to destroy her. A mine should not have been wasted on her, but the officer in charge of the mines should have been ordered to shut off the firing battery and let her through. The same would have been true even in war; mines should be reserved for more formidable craft. It would seem that no one of less rank than the F. C., however, should determine whether the mines should be used on a particular target or not.

The results at Portland were a vindication of submarine mines, if any were needed; but they also indicate quite clearly that the operation of planting is a thing that has never been adequately provided for. There are still a few details of a techinal nature susceptible of improvement; but the system can be depended upon to work with most comforting certainty if once the mines are properly planted.

The submarine mining service calls for a very large proportion of commissioned officers to the enlisted men.

As a result of experience in planting the mines in Boston Harbor during the war with Spain, it has seemed to the writer that it would be wise, if possible, to form a "Volunteer Torpedo Corps," to consist of commissioned officers only, and be made up of electrical engineers and electricans, along the sea coast. These officers would be able, after proper instruction, to perform most of the purely technical duties requiring commissioned officers in connection with the torpedo service in time of war.

Of course, a regular Artillery Officer should be in command of every mine field, but it is thought that a volunteer torpedo corps made up as indicated, would be of considerable assistance and result in greater economy than the use of the more broadly trained regular officers on duty of such restricted scope.

Special boats for planting mines should be provided at every harbor; and to insure an effective defense at a suffi-

ciently early stage in a war, there should be one boat for every five grand groups it is proposed to plant in any harbor.

It is suggested that valuable data could be secured by planting a small mine field somewhere, just as in war, and getting the Navy to countermine it just as they would in war; the real effect of countermines could then be determined, and if the entire operation is carefully conducted it will be no more dangerous than target practice.

INTERNATIONAL EMINENT DOMAIN.*

By Lieutenant MARR O'CONNOR, 10th Cavalry.

THE failure of Colombia to ratify the Panama canal treaty, after manifesting in every manner her satisfaction with the proposed terms, has suggested the title of this article. The existence of another feasible route makes the rejection of the treaty by Colombia of minor importance, but if there were no such alternative route, it is believed that some concert of the leading commercial nations to force Colombia to give the right of way for the canal, might be justified.

In municipal law is a well-known doctrine called the "Right of Eminent Domain," which is the power of the State to appropriate the property of any of its citizens for public use, upon payment of due compensation. It is justified upon the ground that individual rights must yield to the public good, and that no substantial injury results to the individual by dispossessing him of his property, since he is given just compensation, and is merely required to sell his property to the State at a fair valuation. The exercise of this right is undoubtedly an invasion of private rights, and in occasional instances may work hardship to the person so deprived of his property, but as he receives, in nearly all cases, more than a fair price for it, his case is "*damnum basque injuria.*" It might be added that the only opponents of the exercise of Eminent Domain are the owners who demand an exorbitant price for their land, and who, imagining a golden opportunity, attempt to enrich themselves at the expense of the State.

The condemnation proceedings taken by the Federal Government against land which it desires for navy yards and military reservations, are frequent enough, but more familiar are the cases in which our different States condemn land for the use of railroads, or even delegate the right of condemnation to the railroads, permitting them, under certain limitations, to exercise the right for themselves, on the ground that the railway corporations are potent agents of commercial

*This article was received before the recent Revolution in Panama. [Ed.]

development, and land taken for their purposes is devoted to public use, inasmuch as the entire community is benefited. In such cases of condemnation, the damages suffered by the owner are assessed, usually by a jury; and if any benefit will accrue to him by the accomplishment of the purpose for which his land is taken (such, for example, as when it is taken for a public park, and his remaining property will be increased in value), it is considered in awarding the owner a price for his land.

The attitude of Colombia may be likened to that of the private owner who asks an unreasonable price for his land; although it may be almost valueless, he reasons that it is only by acquiring his land that the railroad (as a suppositious case) can accomplish its ends, and determines to profit by its necessity.

Could not a principle similar to the Right of Eminent Domain, in municipal law, be applied by analogy in International law? The State is a community of persons united under a Government for common ends of advantage; the modern view of the relations existing between the nations who are parties to International law, is that it is an association designed to promote mutual advantage. The citizen of a State must surrender certain rights (in the present instance rights of property) at the need of the State; it would seem to be no less logical to require a State which is a member of the association of nations, to surrender some of its rights for the common good. In fact, it has been done; Denmark was coerced into surrendering her "right" to collect "Sound Dues" in the Two Belts, though she had for centuries collected these tolls from vessels passing through them; and of the German States concerned consented with reluctance and only by the use of weighty arguments, to the abolishment of the tolls exacted by the States bordering on the Rhine from vessels navigating that river---a matter long unquestioned.

The powers might combine to secure the land necessary for the construction of the canal on the ground that it was essential to their commercial development and intercourse (supposing that the Nicaragua route was not feasible, or that Nicaragua withheld her consent) and condemn it in the same manner that a State condemns the land of one of its citizens under like circumstances. It would be a dangerous—and perhaps impossible—principle to admit into the law of Nations,

as is fully apparent, but its justice rather than its practicability is advanced. It might be argued that the measure could be employed only against a weak State, but it is probable that a State strong enough to resist such condemnation would itself be progressive and wealthy enough to undertake the construction of the canal, or at least to permit it to be done under reasonable conditions and upon payment of a fair price. The canal is of prime importance to the whole civilized world; Colombia would not be materially injured by the cession of the necessary territory—in fact the canal would be of immense benefit to her—and no one believes that the fears said to be entertained by Colombia for her sovereignty are serious. The only obstacle to the consummation of the project seems to be the opposition of some of Colombia's politicians whose motives may be questioned. It is generally conceded that those of the better element favor the canal.

Such concert would doubtless be difficult to obtain, but not because of the injustice or absurdity of the theory on which its action would be based. "International Eminent Domain" will stand above comparison with many doctrines of International law, such as that of the "Balance of Power," which is quite as arbitrary if not more so.

The United States has always been the advocate of liberal principles of International law, and has been the pioneer in proposing the adoption of doctrines thought by most nations to be excessively liberal at the time of their proposal, but now well established. She could hardly be the sponsor of such a theory as this, having always insisted on the integrity of South and Central American States, and such a measure will probably not be necessary, as an amicable concession may yet be made.

FORT LEAVENWORTH, KANSAS, October 5th, 1903.

Gen. Bates. Col. Raspopoff. Lieu. Col. Foster. Gen. Kobbé.

AUTUMN MANEUVERS—WEST POINT, KY.

OUR AUTUMN MANEUVERS.

By Major ALFRED C. SHARPE, Ass't Adjt. Gen., U. S. A.,
Gold Medalist, M. S. I.

THE educational value of the Maneuvers which have recently been concluded in Kentucky and Kansas can hardly be overstated. They are a realization in large measure of the dreams and hopes which American military students have been cherishing for the past twenty years. They constitute a true War College, a post-graduate course of application for all arms of the service, for officers of every grade, and under most favorable field conditions. Indeed, this system of instruction, made possible by the wise and liberal provisions of the Dick Bill, has already assumed such proportions, and its bearing upon the future course of military training among our people is so potent and permanent and far-reaching, that it may well arouse the thoughtful interest of statesmen as well as soldiers.

In complying with the request of the Publication Committee to submit notes of my observations at these camps, it is hardly necessary to disclaim any pretention to a critical review of the interesting problems presented, even if it were possible to condense such a commentary into the few pages appropriate and available in this JOURNAL. I shall endeavor merely to compile a brief narrative of some of the principal events, with such observations as may seem pertinent, for the information of those who were not so fortunate as to be present, and it will certainly be gratifying if anything here suggested may serve to communicate a small spark of the enthusiasm with which all who participated seemed to be inspired.

Both camps this year were commanded by Major-General John C. Bates, U. S. A., whose long service in peace and war and experience as commander of last year's maneuvers peculiarly qualified him for the duties; while the Chief Umpire, Colonel A. L. Wagner, Assistant Adjutant-General, U. S. A., known in Europe as well as America for his studies and textbooks on the Art of War, was the directing genius under whose immediate guidance the exercises were carried forward with great success.

The first encampment, which covered the period from September 25th to October 16th, was located at West Point, Ky., a small village on the Ohio River, twenty miles below Louisville, and was named Camp Young, in honor of the Chief of the General Staff. The second was at Fort Riley, Kans., from October 16th to 31st, and was known as Camp William Cary Sanger, in honor of the late Assistant Secretary of War.

In addition to the Commanding General and Staff, and a corps of thirty umpires, who attended both camps, the rosters comprised the following troops:

	AT CAMP YOUNG:
First Brigade: Brig.-Gen. W. A. Kobbé, U. S. A., Commanding.	1st U. S. Infantry (8 Companies). 3d U. S. Infantry (11 Companies). 20th U. S. Infantry (4 Companies). 1st Infantry, Wisconsin Organized Militia.
Second Brigade: Brig.-Gen. Will J. McKee, Indiana Organized Militia, Commanding.	1st Infantry, Indiana Organized Militia. 2d Infantry, Indiana Organized Militia. 3d Infantry, Indiana Organized Militia.

Third Brigade: Brig.-Gen. W. T. McGurrin, Mich. Organized Militia, Commanding.	1st Infantry, Michigan Organized Militia. 2d Infantry, Michigan Organized Militia. 3d Infantry, Michigan Organized Militia. 1st Independent Battalion Infantry, Michigan Organized Militia.
Fourth Brigade: Brig.-Gen. Tasker H. Bliss, U. S. A., Commanding.	2d Infantry, Ky. Organized Militia. 3d Infantry, Ky. Organized Militia. 8th Infantry, Ohio Organized Militia. Ky. Artillery Battalion, acting as Infantry.
Cavalry Brigade: Colonel Chas. Morton, 7th U. S. Cavalry, Commanding.	2d U. S. Cavalry (2 troops). 4th U. S. Cavalry (2 troops). 7th U. S. Cavalry (8 troops). 8th U. S. Cavalry (4 troops).
Divisional Artillery: Major Chas. G. Woodward, Art. Corps, U. S. A., Commanding.	14th & 21st Batteries Field Artillery, U. S. A. 1st Battery, Indiana Organized Militia.
Hospital Corps: Capt. Fred P. Reynolds, Asst. Surg., U. S. A., Commanding.	Company of Instruction No. 1, U. S. A. Indiana Hosp. Corps Detachment.
Signal Corps: Capt. Chas. P. Hebburn, Signal Corps, U.S.A., Comm'nd'g.	Company "B," U. S. Signal Corps, Indiana Signal Company.

AT CAMP SANGER:

First Brigade: Brig.-Gen. F. D. Grant, U.S.A., Comm'nd'g.	2d U. S. Infantry, 12th U. S. Infantry, 21st U. S. Infantry.
Second Brigade: Brig.-Gen. J. F. Bell, U.S.A., Comm'nd'g.	6th U. S. Infantry, 25th U. S. Infantry, 55th Iowa Infantry.
Third Brigade: Brig.-Gen. Thos. H. Barry, U.S.A., Commanding.	Provisional Regiment, Missouri Infantry. Second Nebraska Infantry. Provisional Regiment, Texas Infantry.
Fourth Brigade: Brig.-Gen. J. W. F. Hughes, Kansas National Guard, Commanding.	1st Kansas Infantry, 2d Kansas Infantry.
Cavalry Brigade: Brig.-Gen. C. C. C. Carr, U. S. A., Commanding.	4th U. S. Cavalry, 8th U. S. Cavalry, 10th U. S. Cavalry, — Two Squadrons from each Regiment.

Divisional Artillery: Maj. William H. Coffin, Artillery Corps, U. S. A., Commanding.	6th, 7th, 19th, 20th, 25th 28th, and 29th Batteries, U. S. Field Artillery, the 7th being a Horse Battery. Batteries A & B, Kansas Field Artillery.
Hospital Corps: Capt. Fred P. Reynolds, Asst. Surg., U. S. A., Commanding.	One Company of Instruction, Field Hospitals, Nos. 1 & 3, Ambulance Companies Nos. 1 & 3.
Signal Corps: Capt. Chas. P. Hepburn, Signal Corps, U.S.A., Commn'd'g.	Company B, U. S. Signal Corps, Signal Company, Nebraska National Guard.

The maximum total effective strength of each camp was nearly the same, aggregating at Camp Sanger 643 officers and 8,932 men. There were also a number of accredited officers from various States and Territories; those at the Kentucky camp representing New York, Wisconsin and Illinois, and those at Fort Riley being from Georgia, Iowa, Massachusetts, Missouri, New York, Oklahoma, Texas, Utah, North Dakota, Arkansas, California, Vermont, New Jersey and the District of Columbia. Also two officers of the United States Marine Corps were sent by the Navy Department to observe the operations at Fort Riley, and several foreign attachés were in attendance from England, Spain and Russia—Colonel Rospopoff of the Russian General Staff, and Lieut.-Colonel Foster, Royal Engineers, being present at both camps. Several members of our own General Staff, also witnessed the exercises, and the camp at Riley was visited for a couple of days by Lieut.-General Young, Chief of Staff, and Lieut.-General Ian Hamilton of South African fame. The foreign officers appeared much interested and frequently expressed their admiration of the alertness and intelligence of our men, especially the boldness and dash of the American Cavalry. They were also impressed by the cordial spirit of good-fellowship which prevailed among officers of all arms, and the interest and general information which all appeared to possess in regard to other branches than their own—a feature, we were told, quite wanting in European armies.

THE TERRAIN.

It would be impossible to imagine two theatres differing more widely in terrain than those selected for these maneuvers;

AUTUMN MANEUVERS—WEST POINT, KY.
Regular Artillery on Louisville Pike.

the country south of West Point being very close, intersected by numerous roads, dotted with farms, orchards, and cultivated fields, with an abundant growth of forest, and favored with a beautiful defile about two miles in length; while the region adjacent to Fort Riley is largely a rolling prairie, rising northward from the Republican and Kansas Rivers, and cut up by innumerable small tributaries and "draws" which, together with great folds, or undulations, in the ground, afford considerable screen and cover for the operations of all arms.

From the nature of the country it will be seen that the Kentucky district furnished very little opportunity for the advantageous use of artillery—the extreme range available being about 1,400 to 1,600 yards.

At Fort Riley, on the contrary, the artillery positions were excellent, and the sweep of country covered by their fire extended to the longest ranges.

The use of the batteries on such widely different fields gave accent to the question whether field guns under present conditions can continue to be utilized to much advantage at either short or long range. The lessons derived from these maneuvers would indicate that for effective execution they must be limited to mid-ranges, and that the battery commander and his gunners must do exceedingly quick work in getting the range and delivering their fire before encountering the attack of an energetic adversary.

But we leave this to the artillerists.

The schedule of exercises at the two camps was practically the same. Following is the program pursued at Camp Young:

PROGRAMME.

September 25-27—Regular troops arrive and establish camp.
September 28—Maneuver: Advance Guard and Rear Guard.
September 29—Maneuver: Outposts.
September 30—Maneuver: Attack and Defense of Outpost. Organized Militia leave home stations.
October 1—Discussion of Maneuvers: Construction of Intrenchments. Mounted Parade in the evening. Organized Militia arrive and establish camp.
October 2—Combined Maneuvers: Advance Guard (a series of nine detached maneuvers). Forenoon: Lecture to Commissary officers of Militia on "Methods of Administration in the Subsistence Department." Evening: Lecture to all officers on "The Subsistence of Armies."
October 3—Forenoon: Militia officers inspect the intrenchments under guidance of the engineer officer. (Specimens of model intrenchments are left during the encampment as an object lesson to

the troops.) Battalion Drill, close order. Lecture on "Modern Arms and Projectiles." Evening: Discussion of Maneuvers of the previous day.

October 4 (Sunday)—Forenoon: Divine Service. Evening: Band Concerts. Organized Militia march out to bivouac in positions for tactical exercises the following morning.

October 5—Combined Maneuvers: Attack and Defense of Outpost. Evening: Lecture on "Army Transportation."

October 6—Forenoon: Regimental Drill. Lectures to quartermasters of organized Militia on "Methods of Administration in the Quartermaster's Department." Afternoon: Review of the Division. Evening: Discussion of the Maneuvers of the previous day.

October 7—Combined Maneuvers. March of a Division and deployment for battle. Afternoon: Mounted Parade. Evening: Lecture to officers on "Strategy."

October 8—Forenoon: Brigade Drill. Discussion of manuevers of previous day. Afternoon: Lecture on "Military Hygiene." Evening: Troops march out and bivouac in positions for maneuvers the following day.

October 9—Contact of opposing forces, involving attack and defense.

October 10—Discussion of Maneuvers of previous day. Organized Militia break camp at noon.

October 11 (Sunday)—Forenoon: Divine Service. Evening: Band concerts.

October 12—Maneuver: Attack and defense of convoy. (Omitted)

October 13—Maneuver: Rear Guard, invclving passage of a defile.

October 14—Maneuver: Attack and defense of a prepared position.

October 15—Forenoon: Review of command. Afternoon: Discussion of the maneuvers of the three preceding days.

October 16—Regular troops break camp.

This programme was varied at Fort Riley by substituting "The attack and defense of a convoy," for "Passage of a defile," although one of the Advance and Rear Guard exercises in the Humboldt Creek Valley at Riley presented at many points the features of a defile.

In several of the exercises the medical officers, ambulances and attendants accompanied the troops, establishing first aid and ambulance stations, and for the larger commands field hospitals. An experiment was tried, both at Camp Young and Camp Sanger, to bring the medical corps into active operation during an engagement, by having certain men who were ruled out by the umpires as wounded, furnished with diagnosis tags and sent to the rear, or if unable to walk, left on the field until found by the searching parties. Although attended with some difficulties, such as the necessity of caring for the wounded cavalry-man's horse, the experiment appeared to give the

Hospital Corps a fair opportunity to demonstrate its readiness and efficiency.

The Signal Corps established telephonic communication in the various camps, connecting them with Division Headquarters, carrying the lines at Camp Young even down to the Regiments, which proved of great advantage in the prompt transmission of orders, especially in preparing on short notice for a problem. Detachments of this corps accompanied the troops everywhere in the field, stringing the wires along the rail fences or through the brush, and locating their "buzzers" in nooks at the roadside or among the rocks or in the deep prairie grass, keeping the Commander in close touch with his outposts, advance guard, or distant flanks.

Of the many valuable features in the course none was more interesting than the construction of intrenchments. This was conducted under the supervision of officers of the Engineer Corps, and every form of trench and pit in use by modern armies was constructed and explained, the National Guard officers being specially assembled at the trenches for this instruction. The following memorandum issued from Division Headquarters at Camp Sanger, will indicate the method pursued, care being taken in this, as in all other problems, to adapt the work to some assumed situation and to simulate actual war conditions as closely as possible:

MEMORANDUM ON INTRENCHMENTS.

"It is proposed to construct intrenchments on Smoky Hill Flat, with the right flank resting on the Kansas River and the left flank on Whiskey Lake. These intrenchments will serve as a defensive line to resist attack on the pontoon bridge from the right bank of the Kansas River. At the left of the line a lunette will be constructed for a garrison of 200 men.

"It is proposed to employ on Tuesday and Wednesday, October 20th and 21st, 500 men. If work is to be done after the above dates, fatigue details will be detailed.

"The length of the defensive line is about 3,000 feet. About half of this will be occupied by the trenches and lunette; the other half will consist of the intervals between works. The different stages of the trench will be shown. The lunette will be strong enough to resist shrapnel. The gun pits required for the artillery elements of the defense will be constructed by the artillery. Different forms of revetment will be constructed for

the purpose of illustration; also a section of wire entanglement."

While the problems were generally of such character as to afford subordinate officers almost daily opportunity for the exercise of higher command, and for the exemplification of tactical principles which are seldom practised at posts, owing to lack of both men and space, they also gave brigade and division commanders most valuable experience in planning movements, organizing columns of march, preparing clear and concise field orders, and in exercising their ingenuity in handling the higher tactical units on the field of battle. Very instructive forms of field orders were issued by Generals Kobbé and Bliss in the third exercise at Camp Young, in which they were pitted against each other, the latter commanding a division of three brigades opposing a strong advance guard of all arms under the former. The following problem of a reconnaissance in force, and the accompanying field order issued by the Blue Division Commander, General Bell, affords a good illustration of this feature of the exercises. It will be noted that in the order in column all the artillery was with the support, the leading (7th) battery being a horse battery. In the action which followed, one of these batteries was captured by a splendid cavalry charge under Captain Carter P. Johnson, but, unlike the Brigade at Balaklava, it is doubtful if any of the gallant troopers would ever have returned from the jaws of death which the infantry support opened to receive them.

PROBLEM NO. 6—October 23, 1903.

Contact of Opposing Forces.

GENERAL SITUATION.

A Blue Army advancing from the south, with headquarters at Emporia, Kansas, has an advance detachment, composed of all arms, on the Pawnee Flats, near One Mile Creek, Fort Riley Reservation. The Blue Army is operating against a Brown Army advancing from the north. A division of the latter has reached Garrisons, Kansas.

SPECIAL SITUATION.

Blue.

Brigadier-General Bell is encamped on the Pawnee Flats. His command is as follows: 2d Brigade; 3d Brigade; 4th Cavalry; 7th, 20th, 28th and 29th Field Batteries; 2 companies Battalion of Engineers, with appropriate Signal Corps and Hospital Corps Detachments. He receives the following order from the Commanding General, Blue Forces:

HEADQUARTERS BLUE FORCES

EMPORIA, KANSAS, October 22, 1903.

FIELD ORDERS, No. 25:

Brigadier-General Bell, with the troops under his command, now at Fort Riley Kansas, will make a reconnaissance in force toward Garrisons, Kansas, via Keat's Post Office, to gain information in regard to the enemy reported in the vicinity of the former place, said to consist of all arms, 12,0000 strong. General Bell will move at 7.30 A.M., to-morrow, the 23d instant.

By command of Major General BLUE:

R. H. WHITE,
Adjutant General.

MEMORANDUM.

For the BLUE: The line of march from Fort Riley will be via Ogden and School House No. 73 on the direct road to Keat's Post Office.

SPECIAL SITUATION.

BROWN: A Brown Corps is encamped near Garrisons, Kansas. Brigadier-General Barry, with an advance division, is encamped at Peter Eskerson's Ranch on the Keat's Post Office and Ogden road, Kansas. He learns that a small division of the enemy, all arms, is encamped at Fort Riley, and at this hour, 10.30 A.M., it is reported the enemy is forming for an advance on Keat's Post Office. He decides to attack and to capture the enemy, if possible, or at least drive him from his line of retreat via Fort Riley to Emporia, Kansas.

(The Brown forces consisted of the following organizations: 1st Brigade, 4th Brigade, 8th and 10th Cavalry, 6th and 19th Field Batteries, one Company Engineers, with Hospital and Signal Corps Detachments. The Brown Division bivouaced on the night of October 22d at Eskerson's Ranch.)

The following was General Bell's order:

HEADQUARTERS BLUE DIVISION.

FIELD ORDERS No. 1. PAWNEE FLATS, Fort Riley, Kansas, October 22, 1903.

Order of March:

I. Advance Guard: 6th Infantry; Lieut-Col. R. H. R. Loughborough, 6th Inf., Commanding.

II. Support: 55th Iowa and 25th Inf., 7th, 28th, 20th and 29th Field Batteries, in the order named.

I. A detachment of the enemy is reported to be in the vicinity of Garrisons, Kansas, and is said to consist of all arms.

II. (*a*) A reconnaissance in force toward Garrisons, Kansas, will be made to-morrow. A serious entanglement with the enemy is not desired, but a vigorous attack will be made upon him wherever encountered, and will be pushed sufficiently far to drive in his outposts or advance detachments and fully develop his strength and position.

(*b*) The cavalry, operating under special instructions of the Division Commander, will, in case the enemy be encountered by the main column, push in to attack vigorously, and must secure information even at the cost of a portion of its force.

III. (*a*) The main body and advance-guard will proceed from camp at 8.30 A.M. to-morrow, October 23, and will follow the main road from Ogden to Garrisons, via Keat's Post Office (the road which passes School House No. 73).

III. Main Body:
3d Brigade less 2 companies.

IV. Rear-Guard:
2 companies of the 3d Brigade.

The detachments mentioned above will keep well closed up and follow each other at the minimum distances allowable by the terrain and cover.

(*b*) The Commanding Officers of the 14th Cavalry and of the Engineer detachment will report to the Division Commander for special instructions. The following officers:

Capt. R. R. Raymond, Engineer Corps,
Capt. E. B. Winans, Jr., 4th Cavalry,
1st Lieut. Guy V. Henry, 4th Cavalry,

are detailed as reconnaissance officers, and will likewise report to the Division Commander for special instructions.

(*c*) The regimental field dressing stations, accompanied by the necessary Hospital Corps detachments, will follow in rear of their respective commands.

(*d*) The remainder of the Medical Department and equipment, ambulance companies, etc., together with the sick and convalescent, will be reported to the officer designated to take charge of the wagon train. This officer (to be designated later) will select a strong defensive position on the top of Sheridan Heights and will park the wagon and hospital trains and the tool train of the Engineers at a suitable place within the limits of this position, which will be placed in condition for defense by the construction of shelter-trenches, obstacles, etc. All regimental bands, and such sick in quarters and convalescents as are able to do so, will report to the officer designated to take charge of trains, to assist in the defense thereof.

(*e*) The Signal Corps will maintain communication between the train park and the rear of the command. It will also provide signal men with flags to communicate between the Division Commander and advance bodies.

IV. The commander of the main body will detail two companies to follow the command as a rear-guard. Should the command become engaged, these companies will be immediately sent one to the rear of and echeloned on each flank, to guard against surprise.

V. The Division Commander will be found with the support until the enemy is encountered and an engagement develops. Should an engagement take place, he will be found somewhere in the vicinity and in rear of the center of the line, on high ground, if available. Those desiring to communicate with him after the engagement begins must look for his flag.

Copies furnished brigade, regimental, battalion, squadron, and battery commanders.

By Command of Brigadier-General BELL:
MICHAEL J. LENIHAN,
Captain, 25th Infantry, Adjutant General.

COMMENTS.

The march and deployment of the entire division was also an interesting lesson in generalship, especially the problem at Camp Sanger under General Grant, which necessitated a

flank position with his back to the river, and which, in case of a tactical reverse, and in the absence of prompt support, might have developed an exceedingly difficult situation.

This problem, although entirely tactical, suggested some of the features of forming front to a flank, where the consequences of defeat are greatly enhanced, and may result in rout and ruin, as in the case of the Sardinians at Novara in 1849.

It was noted that the movements of the troops after gaining contact were generally too fast, and afforded little opportunity for the proper use of reserves. This will doubtless be corrected in future maneuvers by allowing the umpires to hold the lines more in check.

At the conclusion of each exercise reports were rendered by all commanders in the same manner as would be required in actual war. Each umpire also submitted a detailed statement of his observations of the command to which he had been assigned for the day. These reports and comments were digested by the chief umpire, and, as soon thereafter as practicable, the entire body of officers, and foreign and State attachés, with General Bates presiding, assembled in a great tent where the seats were arranged facing a map of the region, and where the reports and criticisms were read. The subject was then open for general discussion.

The comments of the chief umpire constituted a technical and critical review of the day's work, pointing out with equal impartiality the commendable dispositions made, or the errors committed, in the solution of the problem. These discussions were most instructive and were followed with close attention by the large assembly of officers of all grades.

The police of camps and the entraining of troops, which are so often a source of annoyance and delay, especially with large bodies, were most satisfactorily managed, the embarkation at Fort Sanger being especially well arranged and expeditious. All commanding officers were enjoined in a general order to leave their camp grounds clean; sinks filled and brush piled up and burned; tent drains and ditches about camp and kitchen sinks to be filled and leveled; while all public property, such as water-troughs, picket posts and surplus wood, hay, oil and lime, garbage cans, sink frames, etc., were to be turned in. This being done and inspected, all tentage and heavy baggage was loaded the night preceding departure, the troops remaining in bivouac. The following schedule for entraining the National

FORT RILEY MANEUVERS—CAVALRY CROSSING PONTOON BRIDGE.

Guard was adopted, each train being plainly marked and the troops entraining promptly and without confusion:

Texas:	Train No. 1, 7.00 A.M. Train No. 2, 7.15 A.M. Train No. 3, 7.30 A.M.	Iowa:	Train No. 7, 8.30 A.M. Train No. 8, 8.45 A.M. Train No. 9, 9.00 A.M.
Nebraska:	Train No. 4, 7.45 A.M. Train No. 5, 8.00 A.M. Train No. 6, 8.15 A.M.	Missouri:	Train No. 10, 9.15 A.M. Train No. 11, 9.30 A.M.
Kansas:	Train No. 12, 9.45 A.M. Train No. 13, 10.00 A.M. Train No. 14, 10.15 A.M. Train No. 15, 10.30 A.M.		

At Camp Young the grounds were left in good state of police, but there was much delay in entraining the militia, due in part to the refusal of one of the regiments to accept the coaches which had been provided for it. A similar delay and resulting congestion of the road occurred in 1898 at Montauk Point by the refusal of a volunteer colonel to board his train until assured that it would deliver each company of the regiment at its home station. In war such detention might defeat the best-laid plans and even lead to disaster.

SERVICE OF SECURITY AND INFORMATION.

In all exercises, whether of advance-guard, outposts, reconnaissance, or disposition for battle, the service of security seemed to be generally well understood, but the service of information by orderlies or messengers was very defective. Connecting files were used, but little intelligence found its way back through them; and outposts would often not only observe the advance of the enemy, but actually become engaged without ever thinking of sending any information of the state of affairs to the commander. This, of course, prevailed in greater degree among the National Guard troops. The best service in this particular which came under my observation was in the 6th and 12th Infantry, and 4th Cavalry on outpost duty near the Milk Ranch, about five miles north of Camp Sanger. The command of which these troops formed a part were in bivouac, and were attacked in the early dawn, the plan of the enemy, which was somewhat delayed by the rain and thickness of the night, being to strike them just as the outposts were being relieved. Messengers were constantly coming in from the supports with information, and the commander was kept fully advised of all that was seen by the sentinels and videttes.

A faulty disposition was observed at both camps in establishishing outposts by battalion, one battalion being in the line of observation, a second as support, and the third in reserve. The result being that in falling back two battalions (or possibly three) were mixed together in much confusion.

AMMUNITION SUPPLY.

There was also a tendency, especially in the National Guard troops, to hang on tenaciously to the line of observation, fighting until ammunition was exhausted, and they were ruled out as captured. And this suggests the subject of ammunition supply. However feasible it may appear in open country, such as one finds about Fort Riley, to push or draw a cart, it is absolutely impossible to follow an infantry line through the brambles and thickets in which they frequently had to fight at Camp Young. A good pack mule, with two or three attendants, can keep well up, and would probably be less exposed to accident than any kind of wheeled vehicle. It would be well in future maneuvers if more attention could be given to this matter; the men being made to understand that if their ammunition is exhausted a fresh supply must be close at hand, and that every battalion must have some effective means of replenishing its belts. An effort in this direction might begin by issuing but ten rounds per man, the balance to follow on packs (or in carts, if practicable); then, if the packs or carts are unskilfully handled, being unduly exposed, the umpires should rule them out.

In closing this paper it may not be out of place to add a few further suggestions which arose as the exercises progressed, and which may be worthy of consideration in future maneuvers.

SUGGESTIONS.

I. It would be better to establish two hostile camps five or six miles apart, which would maintain outposts day and night, and keep constantly on the alert. The division commander and umpires could be located midway between the lines, and problems could be worked out quite as well as under the present system. This plan, however, is open to the objection that unmounted officers could not conveniently attend the discussions in the big tent; the distance being too great to walk after a hard day's "hike." But this might be met by assembling them in the open immediately after an engagement and while they are yet near the front. This method prevails in

Europe, but would hardly appear to be of as much value to subordinate officers as the assembly tent system.

II. All regimental commanders should be required to communicate the problem and all orders relating to it to every officer of their commands about one hour before leaving camp for the exercise, with injunctions not to divulge the same to any member of the opposing forces. As a rule no information would leak if not given out until an hour or two before moving.

III. Militia troops should come to camp by regiments—not in brigades. After arrival they should be brigaded, as far as practicable, with regulars—one regiment of United States troops with two of National Guard. Should there not be enough regulars for this purpose, then form brigades from different States, the commander in all cases to be a regular officer. This close association with regular troops would be highly beneficial, and, with troops of other States, would broaden and enlarge the horizon of the men, and accustom them to one of the conditions frequently met in war. They would also realize that they were under a professional soldier and receiving the maximum of instruction possible. During one of the exercises at Camp Young the Brown Army marched to Stithton (six miles south) and went into bivouac in a drenching rain. A troop of regular cavalry, as soon as the halt was ordered, speedily dismounted, established its picket line, and in a few minutes had several cheery fires going; all this in the usual quiet and businesslike way. A militia officer who stood near by, observing the troop, remarked, "That is one of the things our men have not yet learned." Behind him, in the mud and rain, stood his regiment, soaked to the skin, still waiting for directions and all volubly gabbling and giving advice.

If these men could be associated with regulars they would learn quickly by observation and imitation. On the other hand, the regulars might learn something from the militia. An ingenious device for keeping warm was invented by Lieut. Geo. L. Garton, of the 55th Iowa, and may be of interest to the regular who has to live a good deal in camp. A hole is dug in the tent floor about six inches deep and four inches in diameter, in which is placed a lighted candle. Over this is set a half can, made by cutting the tin ammunition can transversely in two, and perforating the top (side of the can) with two or three holes the size of a silver dollar. The earth is cut away slightly on either side of the hole to allow cold air to

reach the candle. The camp cot is then placed over the can, and a blanket, or poncho allowed to reach the ground on all sides of the bed, thus excluding the outer air. The warm stratum under the bed keeps it comfortable and the candle will burn about six hours.

IV. Officers in command who needlessly expose themselves in action should be ruled out, thus devolving the responsibility on juniors in the midst of an action, as would often be the case in actual conflict.

V. No militiaman should be permitted to participate in these maneuvers who has not served at least six months before coming to camp. In some of the regiments men were observed who were quite ignorant of the rudimentary principles—not even knowing how to salute or stand at attention.

VI. A provost guard should be established to pick up stragglers and malingerers. During some of the exercises as many as 28 men from one regiment were counted who fell out on the first mile, and during the reviews at both camps there appeared to be from 500 to 1,000 spectators standing about in uniform who had apparently excused themselves from participation.

VII. The artillery seemed to yield too much to the temptation to fire on dispersed lines and small detachments, instead of saving its ammunition for the enemy's guns, trenches and columns. In the convoy problem at Riley the Blue Battery was so widely detached as to be unable to reply to the Brown, which caught the head of the train descending a slope and held it under fire for twelve minutes, knocking out 22 wagons and filling the road with mangled mules and wreckage. This would probably have demoralized the advance for a full hour. Had the Blue artillery been near at hand looking for its proper target it might have engaged and silenced this battery before it could have done much damage to the train.

It was also noticed in this problem that no effort was made to obstruct the progress of the convoy by destroying bridges, several favorable opportunities for which occurred along the road.

VIII. The saber scabbard continued, as last year, to betray movements and positions, flashing like a heliograph wherever exposed to the sun. A black metal hilt and leather-covered scabbard seem to be an absolute necessity, although

the further use of the saber in the field by infantry, artillery, or staff officers is an absurdity.

IX. The shoulder strap on the field uniform should be abolished. It serves no good purpose and catches in the brush and limbs, almost pulling a man off his horse. The coat of arms should also be discarded, and the U. S. in block letters restored to the collar. It is manifestly impossible to learn the devices of forty-five States and several Territories, whereas the simple letters "N.Y.," "Wis." or "Okla." would be understood at a glance. As it is, a staff officer arriving in haste with an order has to make inquiry at every line, often entailing considerable delay, as instanced in the following conversation overheard by an umpire:"

"What troops are these?"

"Company M."

"I mean what regiment?"

"Second."

"Second what?"

"Second Infantry."

"Well, what State are you from?"

"Oh, from Kansas."

This officer had manifestly not yet familiarized himself with the sunflower?

X. For field service a small strip of the color of the facings and with the insignia of rank embroidered thereon should be sewed on each shoulder, thus enabling anyone to recognize an officer immediately without having to reconnoitre his flank to inspect his collar for cross sabers or rifles.

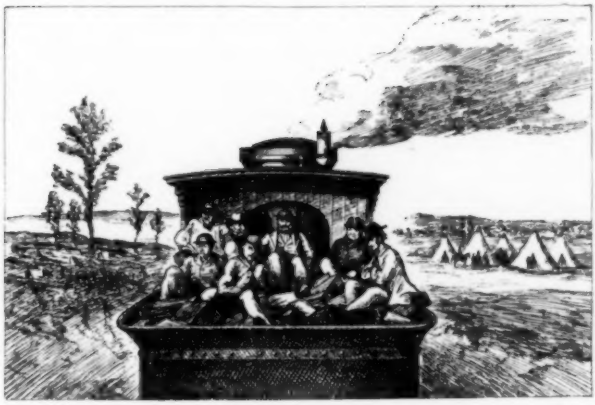
And, finally, a good pair of shoes should be issued to each National Guard soldier each enlistment, and kept at the armory for use only on drills and field duty. Many men at Camp Young were seen sloshing about in the mud with their footwear in some cases of fancy patterns and patent leather, utterly unfit for a good day's march.

The health at both camps was remarkably good, and with the exception of a wild fusilade by some of the National Guard regiments at Camp Young, there were few breaches of discipline. The conduct in general was excellent.

As stated at the outset the educational value of the maneuvers cannot be measured. Their appreciation by the National Guard officers was everywhere manifest, and these gentlemen will doubtless seek to expand the system and extend

it into the more populous States East. The best commendation which came to my ears was uttered by an officer from one of the Atlantic Coast States, who said: "I have been in the National Guard for twenty years, serving in every grade from private to major. When I came here ten days ago I thought I knew something about handling a small command, and would not have hesitated in case of war to accept a regiment. But this last week's work has opened my eyes. The profession of arms is a great study—the command of men a great responsibility. To-day I would hardly have the face to ask for a company."

DENVER, COL., NOV. 2, 1903.



A MILITARY CHAUTAUQUA.

By Captain WILLIAM H. JOHNSTON, 16th U. S. Infantry.

THE recent experience of troops of the United States Army and the National Guard in camp near West Point, Kentucky, and Fort Riley, Kansas, might be defined as above with greater precision than by the term "army maneuvers," by which it has been officially recognized in the orders of the War Department providing such joint instruction. At each camp not only were tactical problems studied and their attempted solution admirably explained and criticized by the Chief Umpire, Col. A. L. Wagner, U. S. A., in the presence of all officers of both forces whose duties permitted their presence, but there were delivered at each camp many lectures to all officers by officers selected for their ability to handle the subjects selected. These lectures, upon such subjects as Strategy, Modern Ordnance, Hygiene, Subsistence, Transportation and Hasty Entrenchments, contributed in no small degree to the education of all officers in attendance, and the instruction was by no means confined to the officers of the National Guard.

The number of the troops which it was possible to assemble was hardly sufficient to warrant the title "maneuvers," as it is understood in Europe, while the lack of sufficient preliminary training in minor tactics by the National Guard, and it must be confessed by the regulars of some regiments, made imperative the adoption of many problems which will no doubt with added experience be learned at home stations before our next "maneuvers" are had. For those who attended with at least a receptive spirit to acquire instruction, there was a lesson to be learned not only when marching or countermarching, firing or receiving fire, but also in camp, observing how other regiments camped, prepared the ration, or cared for mounts and equipments, how other arms of the service moved to the attack or avoided theoretical losses, how commanding officers prepared reports usual in war, what would be possible in action against an enemy, or what one could do without being slaughtered by bullets, or their deadly substitute, the umpires, etc. All these lessons were

CAMP SECOND U. S. INFANTRY NEAR FORT RILEY, KS.

learned by participants, by umpires, and even, through the discussions, by those staff officers whose duties prevented their presence with the troops in a problem.

It is no disparagement of the course at our service schools to state that one month of such practical illustration is worth as much as a year of study at any of our excellent schools, *provided* the officer goes to such camp willing to learn. The influence of the camps of this year will bear fruit in future war as valuable as that harvested in any year at Fort Leavenworth, Fort Riley or Fort Monroe, and that this seemingly extravagant comparison is not a slander of the first, my alma mater, will, I believe. be conceded by all who were so fortunate as to share the experience of this year's Chautauqua at either camp. It is to be regretted that the appropriations did not permit the assembly of more troops in such camps, and to be hoped that Congress will for next year make the instruction of many more regiments, of the regular army as well as the National Guard, feasible.

If I learned one lesson, it was that the umpire, despised as he doubtless was by some unfortunate participants, is supposed to criticize something or somebody daily. So the suggestion of the following will perhaps not be considered hypercritical. It is believed that some, at least, of the recommendations would render the instruction more efficacious as well as more general; First, In the United States Army; Second, In the National Guard.

UNITED STATES ARMY.

Those to whom such experience would seem the most important are the general and field officers of the service, our actual and potential brigade and divison commanders. Yet some regiments of regular troops were so depleted of field officers that regiments were sometimes commanded by captains, and battalions and squadrons by captains or first lieutenants. It is presumed that all the absent officers were on duty that prevented their attendance. But why should any duty prevent? Could not officers on leave, recruiting service, college duty, etc., be ordered to duty for the brief experience of such camp, without prejudice to their special duties? One field officer left one of the camps, before the "maneuvers" terminated, to accept a recruiting detail.

The troops and companies of many regular regiments were

too small to illustrate the drill regulations. Some needed many recruits, left some men at their stations for duty there and more in camp as guard. As a result the remnant for duty at a problem could represent by only the thinnest kind of line the troops it was designed to illustrate. It was my lot one day to umpire a battalion of as good a regiment as the service contains, consisting of nine officers and seventy-eight men. They were four companies (or what was left of them) and carried the national and regimental colors, but for that date were properly relegated to the reserve, where they could "represent" a larger force than they mustered. It is probable that on other days these worthy officers played as minor a part in the theater of action, and thereby lost the instruction possible on the firing line, and perhaps acquired, pardonably, a distaste for subsequent experience at "maneuver camps." When a regiment is designated for one of these camps, it would seem possible to recruit it to at least the minimum authorized by law and orders, by sending to it recruits that otherwise are doubtless sent to regiments not to be used that year in maneuvers. All extra and special duty men at the stations should be relieved during the absence of the companies sent, and such details taken temporarily from the troops that care for the post in the absence of the command at maneuvers.

The rules published at each camp, by which certain limitations were imposed upon the action of the various arms in action and on the march, and by which the umpires were governed in assessing losses under fire, should be published to the army, and used in the problems required at every military station. If thus studied during the year, regular officers at least would come to the solution of these problems better prepared to set a brilliant example to the officers of the National Guard. It would be unnecessary to rule out of action artillery that limbered or unlimbered, frequently by order of an infantry or cavalry commanding officer, within point blank range of hostile infantry. It would not be necessary to criticize regular captains for remaining exposed to flank fire long enough to lose all their men, or to court-martial men who refused to surrender when surrounded by large forces, fired on at pistol range, or ordered to surrender by umpires. The rules drawn up by Colonel Wagner were excellent, though he freely conceded his willingness to accept

amendments thereto, but too many regular officers failed to familiarize themselves with the circular publishing them. It is believed they would admirably serve for all post practice in minor tactics, and that their publication in War Department orders would give them that dignity needed to impress some officers, and insure that uniformity in drill which should characterize every species of our instruction.

At one of the maneuvers had at Fort Riley several students of the Kansas Agricultural College, Manhattan, were among the interested spectators. It occurred to some umpires that within a few hours' ride of the camp were more than a hundred young officers who might profitably lay aside their books for two weeks' practical work in camp, and that the regiments so much depleted of company officers could well use those student officers in duties appropriate to their rank and arm of the service. It would moreover teach the student officer the practical operation of other arms than his own, if he were assigned for the maneuvers to duty with some arm not his own. The schedule of studies at Fort Leavenworth may and doubtless does fully occupy the brief time now permitted each class, but why should not such time be extended two weeks, and some practical work be given the class that would not be possible in a single garrison?

It is recommended that for next year an experiment be made of camping the forces in two locations, separated by sufficient space to prevent officers serving with the troops from one camp, known for example as the Blues, from knowing the exact strength and composition of the troops out that day from the other camp as Browns. At both West Point and Fort Riley, it was possible to know what troops represented the Browns, by observing them leave camp in the morning for the distant rendezvous from which their movement commenced later that date. And conversely, those with the Browns logically reasoned that what infantry, cavalry or artillery had not been assigned to the Brown army would be encountered with the Blue enemy. The general situation and its own special situation, Blue or Brown, drawn up by the Chief Umpire, were supposed to contain all the information either force had of its opponent. Yet it was not rare to hear participants base their movements upon the assumption, usually correct, that such and such a force was with their enemy, and that such and such an officer would doubtless make certain

dispositions, as they knew his probable plans. If the troops camped apart, no one need know how many of each camp are sent out each day, except the Chief Umpire and the Commanding General's staff. This would make participants gain their information as in war by reconnaissance instead of by deduction. Furthermore, after the completion of each movement or problem, the troops could return to their respective camps, having for one force at least, viz., that sent out first to a rendezvous, and this year called "Brown," much less distance to march in order to illustrate the problem. Communication between the two camps could be permitted on Sundays, days not devoted to a problem, or from the close of one problem till midnight. The officers could attend the discussions on Sundays or days not occupied, or each discussion could be written in duplicate, and read in assembly at each camp. Lectures could be given one night at one camp and the next or any other evening at the other camp. As the umpires are mounted they could easily join either force before its action, and should camp with the Chief Umpire at the headquarters. Rations could be hauled from store-houses at the camp nearest the railroad to the other camp. It is not believed that such attempted imitation of two hostile camps would entail additional expense.

Many officers even of the regular forces complained that they were not informed what the object of their movements was until some days after the problem had been duly illustrated, umpired and reported at the assembly. Meanwhile their minds had become occupied by consideration of other problems and their interest in the past had been lost. The commanding officer of Blue or Brown forces always received a typewritten statement of the general situation and of the situation special to his own force the day before the maneuver. He usually assembled his regimental commanders, and explained the object of the orders, of which he gave written copies to his immediate subordinates. But somewhere along the chain of responsibility a link failed to convey information to the officers below, and many company officers were left in ignorance of where the enemy was, what he was supposed to be doing, and what the movements of his own force were intended to effect.

I believe this could be remedied by furnishing each regiment, squadron, battalion or battery sufficient printed copies

of the general situation and the special situation of its side to furnish one to each officer, and this on the day before the maneuver. Each brigadier general in embryo could then mentally formulate the plan which would be his were he in command, and test its possible efficacy as subsequent movements of his own or hostile forces were made. If every regimental or squadron commander had delivered written orders to his subordinates, and these orders had contained the information supposed to be incorporated in such orders in war, much of the complaint made by company officers would have been obviated.

I do not approve of the suggestion made by some officers that printed copies of the Chief Umpire's report and criticism be distributed to the commands for information of the enlisted men. It was very properly prescribed that the report and discussion should be for the officers only, press representatives being excluded and the proceedings considered confidential. Discipline would be impaired if the occasional criticism of officers, even though not mentioned by name, should be published to the men. All officers were invited, and later ordered, to attend the discussions, and while the greatest interest was manifest, there was not sufficient discussion by participants. The Commanding General each evening invited debate, but many officers seemed to think they might unduly prolong the session if they defended formations criticized by umpires or advanced arguments which they were quite willing to offer in conversation "out of court." As the discussion of the problems was the most instructive portion of the experience, and as many officers by their duties with the reserve or with a flanking movement had not seen the main engagement, the failure to comment, through reluctance to detain their comrades, indicated a lack of interest that really did not exist. Our drill regulations and our rules for the conduct of minor tactics were really on trial under service conditions, and a full and free discussion of their efficacy was designed to test the propriety of following or amending such code. Some movements which have been in our drill books for years were found in practise to be useless or dangerous, while some brilliant formations for advancing under fire, though not prescribed in any drill book, were attempted with success by some of the dashing cavalry officers with whom it was my lot to serve as umpire. It was attempted to give

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credit in the umpires' reports for such originality as well as to criticize departures from the regulations thought to involve loss of men in action. Some such departures, when explained by their authors, were approved by the Chief Umpire, and no criticism was endorsed by him, if the formation might have contributed to the success of the maneuver under actual fire.

While on the subject of the drill regulations, it is pertinent to note that in the deployments there was a general failure to follow the attack formations prescribed. Supports were frequently omitted, reserves seldom used. Men would, when suddenly fired upon, be directed to "get there," to "scatter along a fence" or in a sunken road, to "join Sergeant ———" or "stay with Corporal ——— ," etc., while the integrity of squads and sections was not preserved. Many regiments neglected to provide connecting files between the component parts of an advanced guard or outpost, or to use signals for conveying information; and undue shouting was heard. The plans adopted may have been superior to our drill regulations, but if so the latter should be amended.

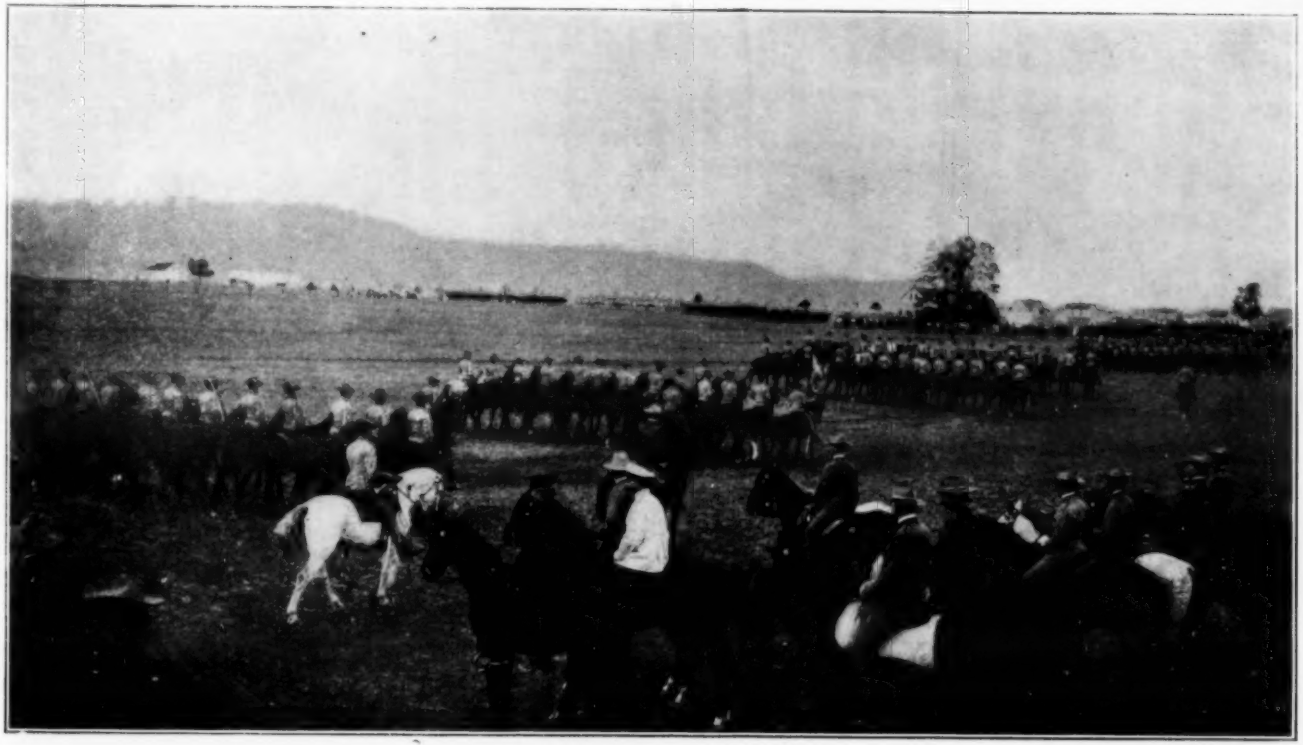
In some infantry commands the men carried their pieces at a right shoulder, even when in extended formation and likely to be seen by the enemy. The reflection of the sun from the barrels was thus more noticeable than had the pieces been carried at a trail, as in some regiments is the rule. While the regulations do not prescribe or forbid any position, provided the muzzle be elevated, it is believed they should require that the piece be held almost horizontal, the barrel down, whenever men are deployed into lines of sections, squads or skirmishers, and when on advance guard, patrol or outpost duty. The conspicuousness of the new German-silver scabbard of officers was an argument for the substitution of a bronze scabbard for service; or, better still, the abolition of the saber or sword for all officers. It might at least be discarded in maneuvers and in service, and officers required to carry a revolver only. At least one regiment, with the approval of the Commanding General, authorized such equipment of its officers.

At this post, and presumably at all others, instruction in litter-bearers' drill and first aid to wounded is given for an hour each week. It has been the impression of line officers thus engaged in making poor Hospital Corps men out of good infantry soldiers, that in war they would have to care for

their wounded to some extent. If any first-aid packages were carried by commands at these problems, or any litters by infantry companies, I did not see them. At each camp an experiment was made of tagging the wounded, or a portion of them, with diagnosis tickets. But men thus tagged were not cared for by their comrades nor carried from under fire. The chief surgeons directed that they wait, where tagged, for members of the regular Hospital Corps to find them and dress their supposed wounds. The latter did their duty far more efficiently than armed combatants could have done it, and the firing lines thus saved men for action. But many of us left the maneuvers rather skeptical of the value of further instruction of our men in duty which cannot be done even at a bloodless maneuver.

It was not my good fortune to see any troops of the line make use of flags, lanterns, heliographs or any other means of visual signaling. This may have been due to the extraordinary efficiency of our representatives from the Signal Corps. No troops did better duty than this force, which followed each command and established communication between its fractions by means of telephones connected by copper wire laid along fences and on the ground. But it may be asked if the line should not have attempted visual signaling with flags or heliographs. The terrain at Fort Riley was such as to make the heliograph especially useful, and bright sunshine was had on nearly every day of the maneuvers there.

One of the most striking lessons of the experience, and at the same time the cause of congratulation, was the invisibility of the present service uniform at comparatively short ranges. When it was possible, troops wearing the blue blouses or shirts were assigned to forces on duty such as an outpost, where it was possible for most men to keep under cover. The "Browns" were usually the force which had necessarily to expose its men by attacking an outpost, a position or a convoy. Nevertheless, it was encouraging to see how close a strong line of Brown skirmishers could approach over ground free from any cover but grass less than two feet deep. Our dismounted cavalry could hide their horses in a draw among bushes, crawl a few hundred yards, sometimes very much like snakes, deliver a volley at the Blues within 300 yards and retire without being exposed to fire that would have crippled them. The force in blue was distinctly handicapped, as its men could be



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seen at great ranges, sometimes even when attempting to lie in the grass and conceal their position. The orders permitted the "Browns" to wear brown canvas fatigue suits as well as khaki. In many lights and through cornfields or grass the difference in shade between these fabrics was such that men with the fatigue suits were occasionally taken for the "Blues," and one regular cavalry organization (Brown) fired volleys on a line of a regular infantry battalion (Brown also) the men of which wore the canvas suits, within 300 yards.

The provision of paragraph 865, Army Regulations, 1901, that orders should be transmitted through intermediate commanders, was frequently violated. At one maneuver I saw two squadron commanders given orders, directing their movements in the attack of a position, directly from brigade headquarters, without their regimental commander, who was present, being informed even what their orders required. During engagements, it was not unusual to see regimental commanders give orders to troop commanders direct, after orders had been given by squadron commanders which involved movements by those same troops. Paragraph 862, same regulations, requiring that verbal and important written orders be carried by officers, was as frequently ignored. Enlisted men were doubtless often the only possible couriers, but it is believed on each such occasion the order could have been written by the officer or his staff officer, and some mistake, due to lapse of memory of the couriers avoided. Some curious mistakes occurred through this failure to write and properly address orders during an engagement. One commanding officer who sent a message by orderly to the commanding officer of some unit of his command, later received the same message from his own courier, the man having forgotten to whom he was directed to report and mistakenly selected the brigade commander from whom he received the order as the one to whom he was to report. It was the motto of a general officer on whose staff it was once my good luck to serve, that an officer who sends a verbal message is lost; possibly he expressed it more forcibly, but this looks better in print. At the maneuvers officers thus offending were not "lost," but they frequently made possible blunders for which their juniors were criticised.

THE NATIONAL GUARD.

To acquire a correct estimate of the efficiency of the organizations of the National Guards, or as they were named in orders, the "Organized Militia," one must reflect that they are composed of men who live for their military training rather than by it. They are not paid by their States for the time devoted to drill, nor in most States for the time spent in camp. Their officers must buy uniforms without any pay or allowance with which to pay for them, and some must contribute from their private purse to support companies the maintenance of which should be a public tax. Many of their enlisted men could not obtain permission from their employers to absent themselves, as the regiments, or most of them, had already participated in State encampments to comply with the provisions of the Militia Act. To fill vacancies thus made in their ranks, many companies enlisted such men at their stations as could absent themselves. These new men were, as a rule, without even the elementary instruction necessary to fit them for the simplest formations in close order. A condition even less satisfactory was that of the provisional regiments, sent by States that could not muster sufficient strength in any organization as it existed. This association of officers and men in companies and battalions without previous drill or even acquaintance, marred the efficiency of officers who in their own organizations were doubtless a credit to their State.

For future maneuvers it is recommended that only such regiments as are reported by the army inspector at the annual inspection sufficiently instructed in extended order, outpost and advance guard duty, be invited to attend, and if a State cannot send a regiment intact, let it send a battalion. Under no circumstances should provisional organizations be trained and paid, as they are disbanded as soon as the service is terminated. We might as well invite patriotic citizens generally to serve at such maneuvers, and no doubt some instruction would be imparted to the general public. But the object of National Guard participation in army maneuvers is to train organizations, not individuals, for war. We have the address of the former and may call them out for active service. The latter might not be found.

Having reached the camp, these regiments of the National

Guard should be brigaded with regular regiments, for the benefit of the experience such intimate association in camp would bring. Many of the State representatives present at the maneuvers expressed to me their opinion that such assignment would be appreciated by their troops. The few organizations that were thus brigaded under regular army officers, with regular army staff officers to supervise their camp and supply and instruction, received flattering reports from the inspectors and umpires.

An officer of the regular service might well be attached to each National Guard regiment, as a sort of coach for its officers. He could assist them in their relations with the supply departments, supervise the preparation of the ration by the companies—a new duty to most of them—give instruction to the officers and men in minor tactics, coach them in the field when out to illustrate a problem, and otherwise, without exercising command, make himself invaluable to the regiment and gain for it more favorable comment than was possible this year. In one regiment it was stated that next year they will ask for a regular sergeant for duty with each company, to coach their non-commissioned officers and men. Not a bad idea.

Before going to the camp, each regiment should be trained in outpost duty and the formation of an advance guard. In Indiana some such instruction was given at the State camp, and the brigade commander had printed and distributed to each enlisted man in the brigade of three regiments a pamphlet containing extracts and plates from "Security and Information." As a result one of these regiments was complimented by the umpires at its first problem, for capturing or killing all of two troops of regular cavalry harassing their march. In most commands no instruction at all had been given in extended order or minor tactics. They were necessarily rushed into a university training before they had graduated from a high school.

It was of course necessary to employ the National Guard in many problems in which it was difficult to gain for each regiment much instruction. Without their valuable assistance our brigade and division commanders would have been with but imaginary commands. They certainly learned something, even when left behind in a reserve, or when posted in an outpost line which the enemy did not attempt to force:

the valuable lesson, that "they also serve who only stand and wait," if no more. But it requires a high degree of discipline to be content with such minor part while something more exciting is doing further to the front. For this reason it would be well to give such regiments more of the simple detached problems, in which their own officers are called upon to exercise some judgment, and in which their men are given an opportunity to expend some of their insatiable desire to shoot. This might be done near camp; or the commands sent out for an all-night outpost, to be tested during the night, and also with the regulars in more ambitious problems during the day.

A regular officer should lecture each night to the enlisted men of each regiment in camp, on camp sanitation, minor tactics, care of their arms and equipments, customs of the service, etc., even if no such officer be detailed for duty with the regiment. The problems already tried could profitably be explained to the men, whose officers learn the same lesson by attending the discussions in assembly.

It will be impracticable to give instruction in small-arms firing at such camp. That should be acquired at the home station of each company; if not on a range, at least in a gallery. Regiments which have neglected so important a subjcet should not be accepted for such maneuvers. This would encourage the construction of ranges—even short ones—at home, where such instruction belongs.

The discipline of National Guard regiments would be improved if the law permitted fines to be assessed against the pay of officers and men for infractions of discipline en route to and from the camp and while serving there. National Guard courts could impose such fines, but there is no authority for the collection by the army paymaster.

Congress should be asked to pass a law making it a misdemeanor, punishable by heavy fine, to discharge any employee for his service with a National Guard organization at camps of instruction under the Militia Act. It was said that many of the men who went to West Point or Riley would lose their positions on return. If our corporations are permitted to thus discourage the attendance of their employees at future camps, what can be expected of the men? The States should pass similar acts to protect their troops in attendance at State camps.

Notwithstanding these criticisms the conduct of the National Guard was most creditable. They marched long distances, endured rain and cold patiently, came back to camp at times without having seen an enemy or fired a shot, and after discussing a meal of army rations without "trimmings," slept with less bedding than was the rule with regulars. There were cases of straggling, due to the presence of so many recruits in the ranks; who, as they expressed it, "were not pack-horses," and objected to going into action with blanket rolls and equipments to weigh them down. Complaints of annoying the citizens, or appropriating property, were very rare, and the absence of the picnic spirit, or desire to have a wild time, was noticeable, especially at Fort Riley. The appearance of the officers was most creditable, many of them having provided themselves with the latest service woolen uniforms, service saddle cloths, saddles, bridles, etc., and some with revolvers, field-glasses and compasses. Some regiments—almost all of them—had both blue and khaki uniforms, and some, overcoats. A few States provided conical wall tents, in which fires were had. But most of the men used old wall tents, not perfectly water-tight, and without fires. The conical tent with stove was properly appreciated at Fort Riley, and all States should draw them to replace their present wall tents.

It is believed that Congress should authorize the issue of one pair of russet shoes and two pairs of light woolen stockings to each officer or man of the National Guard who attends an encampment. These items are not issued by the States; the men wear their own, frequently badly made, shoes, and one long march in the mud ruins them. When a man earns in ten days only $4.30 for his presence at camp, it reduces still more his reward to make a new pair of shoes necessary for the trip. One day was lost at West Point, because the National Guard, which had spent one night in bivouac and one day in the rain on outpost duty, with approximately fourteen miles' march in connection therewith, had to give their men a day of rest to dry their one pair of shoes and get them on their swollen feet again. Our men, who had at least two pairs of shoes, had dry shoes to wear while the others were being cleaned and dried. It is thought that this Gem is fully as necessary for the comfort of the National tiuard as forage for officers' horses, which it is generally con-

ceded was improperly omitted by Congress from its Act of last January. These shoes should not be charged to the men, but given as a bonus, and dropped by the issuing quartermaster on certificate of the mustering officer that they have been issued on schedules.

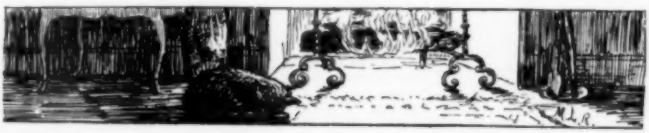
The purpose of this paper will have been misapprehended if the above comments are thought to express any opinion that the maneuvers were not of immense practical benefit to both regulars and National Guard, or that in the light of our limited previous experience better arrangements could have been devised for their instruction. On the contrary the orders issued, the program adopted, the problems attempted, and the facilities provided by staff officers for the encampment supply, comfort and entraining of the troops were excellent.

But as all things in this world are the result of evolution and our drill and instruction as much so as our arms and equipment, it is believed each year's experience will suggest possible methods by which more can be learned in the brief life of such camps than was possible before. We have advanced a long distance beyond the sort of training that was in vogue in the service ten years ago, and our present superiority should be prophetic of future perfection.

More is to be gained in the instruction of National Guardsmen than of regulars, because the subject is newer, and it may require some years to learn in what manner this valuable force may become in reality what it is by name.

If this year's experience had accomplished nothing more than the initiation of the fraternal feeling which was observed between officers of both services, and the realization by those of each force of the virtues of the other, the money devoted to the experiment would have been well spent.

We met as strangers, but parted as brothers. Each force has more friends among the other force than ever before.



THE TRAINING OF THE ORGANIZED MILITIA.

By Colonel EDWARD E. BRITTON, National Guard, N. Y.

Gold Medalist, M. S. I. 1899.*

THE most important military problem which confronts to-day the people of the United States as represented by their Federal and State governments, is the training of the organized militia. The militia law of January 21, 1903, swept away the obsolete provisions of the act of 1792, based on the old theory that every able-bodied citizen of the country could be counted upon, not only to arm and equip himself at his own expense, but to train himself ready for service, on call. By it, Congress resumed its rights under the Constitution: "To provide for the common defense;" "to provide for calling forth the militia to execute the laws of the Union, suppress insurrections and repel invasions;" to provide for organizing, arming and disciplining the militia and for governing such part of them as may be employed in the service of the United States, reserving to the States respectively, the appointment of the officers and the authority of training the militia according to the discipline prescribed by Congress." At the same time, the enactment of this law renders unconstitutional, any State military force which shall remain in existence after five years, without having complied with its conditions, the Constitution providing that "No State shall, without the consent of Congress . . . . keep troops or ships of war in time of peace."

The policy and practise of our form of government has always been to depend mainly upon the volunteer or citizen soldier to fight the country's battles. They have done so in the past and must, in any great war, do so in the future. Every soldier in the Revolutionary War took the field from civil life. At the time of the declaration of war, 1812, the regular army consisted of 6744 officers and men, exclusive of staff. The war was fought principally by militia, of which 410,603 were drawn, but the results were disastrous, owing to the defective militia system and training and the preten-

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State Militia in Camp.

tions of some State authorities, which caused lack of harmonious and cohesive action.

At the close of the Mexican war, the forces were more evenly divided than is likely to occur again. The regular army, which just prior to the outbreak of that war, in 1845, aggregated 7883 officers and men, numbered at its close 24,033 and the volunteer forces 23,117. As the result of experience with the militia, as constituted in 1812, the volunteer system which, on a small scale, had been found to operate well in emergencies in Kentucky and Ohio, was first used in the Mexican war.

In 1860, the strength of the regular army was 12,931. During the Civil War, the number of citizen soldiers furnished to the Union armies (reduced to a three years' basis) was 2,326,168, Maine contributing 70,107, New Hampshire 33,937, Vermont 33,288, Massachusetts 146,730, Rhode Island 23,236, Connecticut 55,864, New York 448,850, New Jersey 76,814, Pennsylvania 337,936, Delaware 12,284, Maryland 46,638, West Virginia 32,068, Ohio 313,180, Indiana 196,363, Illinois 259,092, Kentucky 75,760, Iowa 76,242, Kansas 20,149, Michigan 87,364, Minnesota 24,020, Missouri 109,111, Wisconsin 91,327. At the close of that war, there were on the muster rolls of the Union armies, 1,034,064 volunteer citizen soldiers.

On June 30, 1897, there were about 23,900 officers and men of the regular army present for duty. In August, 1898, near the close of the war with Spain, the strength of the forces was: regulars 58,688, volunteers 216,029.

As a general principle, the greatest economy of men, resources and time in the conduct of war, lies in the ability of a country to put into the field, with the least delay, the largest forces that may be necessary, properly organized, trained and equipped; otherwise, however great her natural resources, experience has shown that final triumph has been dearly bought at an extravagant price in blood and treasure.

Can anyone believe that war between the United States and another great Power is impossible? If not impossible, then it is possible. Shall we not continue to have national rights to maintain and interests to protect? If we have to fight for them, will we not fight? I think we will. That is our way of doing things. Shall we not prevent any of the South American States from becoming dependencies of any of the

European powers? Shall we not control for all future time, an inter-oceanic canal on our own continent, which at the same time is a vastly important element in the commerce of the rest of the world? Must we not have our honest share in the trade with three hundred millions of people, the last of the great undeveloped markets of the world to be opened up to modern manufactures and enterprise? Shall we not compel, if need be, respect for the persons, rights and interests of our citizens abroad? We certainly shall. That is our way of doing things.

As a permanent guarantee that all this will be done, what are ten or fifteen millions of dollars annually, out of Congressional appropriations of upwards of a billion?

The geographical position of the United States is at the same time an element of military strength and of weakness. Operations against us by any continental European power must be carried on a long way from their base, but the length of our coast line, dotted from end to end with populous cities and prosperous surroundings, is immense.

No purely defensive operations can achieve success in war.

A navy is a weapon of offense, either against that of the enemy or against his shipping or territory. It must have entire freedom of action. It could not, in any event, defend our coast. It could not be sufficiently numerous to be in so many places at once. Every important port may be fortified, but the guns are available only against ships within range. There must be infantry and field artillery to protect the sea-coast defenses, some of which cover the supply bases of our ships of war, against capture by the enemy's land forces; more infantry and field artillery to protect against depredadations of forces, however small, which land anywhere on our coast from the enemy's fast cruisers; infantry, cavalry and field artillery to hold points in the enemy's country, seized by our navy. So that, seeking no conquests and assuming that our part may be the defensive-offensive, we shall still need a lot of infantry, cavalry and field artillery.

We shall also need a lot of coast artillerymen, and these cannot be picked up ready made, no more than can be field artillery or cavalry. The present regular army strength (October, 1903) of the coast artillery arm, is 525 officers and 13,734 men. The number required for *one* relief for all the guns expected to be mounted by June 30, 1904, is 957 officers

and 28,552 men. The number required for *one* relief for the total number of guns comprised in the plans for coast defense thus far projected, is 1318 officers and 42,096 men. And each gun should have *three* reliefs.

How and whence are all these forces to be had when wanted and wanted in a hurry? Uncle Sam pays, clothes, feeds and quarters his regular soldiers better than any others on earth and we think they are better soldiers; but they cost money. And if there were no other way, it would be economy at the price. Our Government has apparently already determined that we shall not be lacking, to a certain extent, in military preparation. More has been done within the past four years than during the entire thirty-five years following the Civil War. But it is not likely that an increase in the maximum strength of the regular army will be authorized in time of peace and possibly not in war and the tendency is, in time of peace, to keep close to the minimum. Reliance must therefore be placed, for additional trained soldiers, first, on the organized militia, and next on the regulars and the militiamen who, having served their terms, go back to civil life.

The returns of the organized militia of the United States for 1902, show the aggregate strength to be 118,259, of which there were engineers, 1045; cavalry, 4951; coast artillery, 2828; field artillery, 4707; infantry, 101,537; signal corps, 834; hospital and ambulance corps, 1206. The new militia law contemplates that all of these may, if needed, be ordered into the service of the United States as militia, to serve a period not exceeding nine months, within the confines of the United States. But, setting aside the fact that the Constitutions of some States require the maintenance within the State of a specified number of troops, it would be contrary to public policy to withdraw all the troops from their respective States, where some of them should remain for State purposes.

The United States Government has recently taken some steps in the right direction for national defense. It has provided for the complete modern rearmament of the organized militia; appropriated $2,000,000 towards its more complete equipment; made provision for encampments and maneuvers for practical instruction in field work; but it can well afford to go still further. It can, and doubtless will, complete its equipment. That is a good investment in material of war, available in an emergency and not to be created at the moment when needed.

European powers? Shall we not control for all future time, an inter-oceanic canal on our own continent, which at the same time is a vastly important element in the commerce of the rest of the world? Must we not have our honest share in the trade with three hundred millions of people, the last of the great undeveloped markets of the world to be opened up to modern manufactures and enterprise? Shall we not compel, if need be, respect for the persons, rights and interests of our citizens abroad? We certainly shall. That is our way of doing things.

As a permanent guarantee that all this will be done, what are ten or fifteen millions of dollars annually, out of Congressional appropriations of upwards of a billion?

The geographical position of the United States is at the same time an element of military strength and of weakness. Operations against us by any continental European power must be carried on a long way from their base, but the length of our coast line, dotted from end to end with populous cities and prosperous surroundings, is immense.

No purely defensive operations can achieve success in war.

A navy is a weapon of offense, either against that of the enemy or against his shipping or territory. It must have entire freedom of action. It could not, in any event, defend our coast. It could not be sufficiently numerous to be in so many places at once. Every important port may be fortified, but the guns are available only against ships within range. There must be infantry and field artillery to protect the sea-coast defenses, some of which cover the supply bases of our ships of war, against capture by the enemy's land forces; more infantry and field artillery to protect against depredadations of forces, however small, which land anywhere on our coast from the enemy's fast cruisers; infantry, cavalry and field artillery to hold points in the enemy's country, seized by our navy. So that, seeking no conquests and assuming that our part may be the defensive-offensive, we shall still need a lot of infantry, cavalry and field artillery.

We shall also need a lot of coast artillerymen, and these cannot be picked up ready made, no more than can be field artillery or cavalry. The present regular army strength (October, 1903) of the coast artillery arm, is 525 officers and 13,734 men. The number required for *one* relief for all the guns expected to be mounted by June 30, 1904, is 957 officers

and 28,552 men. The number required for *one* relief for the total number of guns comprised in the plans for coast defense thus far projected, is 1318 officers and 42,096 men. And each gun should have *three* reliefs.

How and whence are all these forces to be had when wanted and wanted in a hurry? Uncle Sam pays, clothes, feeds and quarters his regular soldiers better than any others on earth and we think they are better soldiers; but they cost money. And if there were no other way, it would be economy at the price. Our Government has apparently already determined that we shall not be lacking, to a certain extent, in military preparation. More has been done within the past four years than during the entire thirty-five years following the Civil War. But it is not likely that an increase in the maximum strength of the regular army will be authorized in time of peace and possibly not in war and the tendency is, in time of peace, to keep close to the minimum. Reliance must therefore be placed, for additional trained soldiers, first, on the organized militia, and next on the regulars and the militiamen who, having served their terms, go back to civil life.

The returns of the organized militia of the United States for 1902, show the aggregate strength to be 118,259, of which there were engineers, 1045; cavalry, 4951; coast artillery, 2828; field artillery, 4707; infantry, 101,537; signal corps, 834; hospital and ambulance corps, 1206. The new militia law contemplates that all of these may, if needed, be ordered into the service of the United States as militia, to serve a period not exceeding nine months, within the confines of the United States. But, setting aside the fact that the Constitutions of some States require the maintenance within the State of a specified number of troops, it would be contrary to public policy to withdraw all the troops from their respective States, where some of them should remain for State purposes.

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Nothing would conduce more to peace with the world, nor to the security of the nation in the event of war, than the sure ability to put into the field without delay, not less than 500,000 trained men, properly organized and equipped, whatever additional forces might be required thereafter. Of these, the necessary proportion should be coast artillerymen, who require special training not to be had except in time of peace, and whose service must commence with the declaration of war. There are now available less than one-fifth of the force likely to be needed.

In every State where there are coast defenses, a sufficient number of coast artillery companies should be organized to provide, with the regulars, for completely manning the guns. The service is local. The men are trained in the use of the same guns and become familiar with the same works and field of operations which they would occupy in war. The service is popular. They are preparing for the defense of the homes of their neighbors and themselves. The service is attractive. It is scientific and is known to demand a high order of intelligence. Armed and drilled as infantry, it is equally available for State purposes and costs less to maintain; outdoor work in already existing coast works, close at hand, requiring less outlay than encampments or maneuvers. The citizen soldier is eminently fitted for it, practical knowledge of engineering, mechanics, electricity, chemistry, etc., being found in sufficient numbers, in all communities.

In New York State, the 13th Regiment, Heavy Artillery, nearly 1200 officers and men, could efficiently handle coast defenses against an enemy at any time. In Massachusetts, the 1st Heavy Artillery deserved and received high praise from the United States officers for its work in maneuvers on the New England coast. Connecticut and California are engaged in organizing additional coast artillery forces. Rhode Island, South Carolina, Georgia and Mississippi have made a good beginning.

The numerical strength and practical value of the organized militia, is mainly a question of money support. The raw material is equally good and available in all the States, but in such as cannot afford the necessary appropriations, the desirable quantity and quality cannot be expected. The struggle to keep together the organizations in some of the States has been desperate and disheartening, and it is almost past under-

standing how they have been saved from disruption. Nothing dut innate martial spirit and patriotism could have done it.

The best trained and equipped organized militia in any State has cost, exclusive of armories and their maintenance, approximately forty-five dollars per man per annum. Fourteen Southern States, containing more than one-quarter of the entire force of the country, have struggled on with about sixteen dollars per man, per annum, deficient in equipment and quarters, and with little, if any, practical field work. Most of the States fall measurably below the forty-five dollar mark.

Few States provide suitable or in fact any armories at all. Some have been erected at the personal expense of the members and friends of the organizations. Now that the United States Government has given such a pronounced practical manifestation of intention to do its share, the least that the States should do, is to provide the armories. They are public property, and an asset of the State; they insure proper care of arms and equipments; they are indispensable to regular and systematic drill, instruction and rifle practice; they constitute a kind of social center in the community, attract a good class of men and popularize the service with the mothers, wives and sweethearts. Uncle Sam would not think of keeping his regular troops and military property in the transient rented upper story of some business establishment.

The plan recently adopted to secure armories for all the organizations, in one of the middle Western States, strikes me as politically practical and effective. It includes the preparation of a bill to provide for the erection, by the State, of a suitable armory in every locality where there are troops, a certain sum to be appropriated by the Legislature annually, until all the armories shall have been completed.

The cost of the regular army soldier is about $700 per annum, term of enlistment three years, so that 20,000 additional regulars would cost about $14,000,000 per annum, and about that number of trained men would be returned to civil life each three years. That sum, appropriated annually by the United States for the organized militia, would maintain, completely armed, equipped and trained for service, 300,000 organized militia of the very best kind and return to civil life in a few years a sufficient number to constitute a trained reserve of hundreds of thousands, rendering us invincible against all the world.

The militiaman who readily and willingly gives his time and energies to his training should be absolutely freed from incidental expenses. The public, which he serves at a personal sacrifice, should relieve him from this burden. He should receive a reasonable allowance for each drill, to be paid periodically, less fines for delinquencies. That would cover his expenses and provide a consideration, without which no contract is valid.

The holding of a commission in the organized militia entails such an expense as to constitute practically a property qualification, so that the selection of officers, that all important factor in discipline and efficiency, is limited to a class so privileged, to the exclusion of those who possess only intelligence, education, good character, military zeal and aptitude for command. This restriction should be removed, that the field for selection may be enlarged.

It would be but a poor compliment to our regular officers, who are known the world over for their high soldierly qualities and education, to believe that they consider their obligations end with the proper performance of routine duties. In the natural order of things, each looks to a high command in war, which must necessarily consist of citizen soldiery. His name and fame will depend on the efficiency of his volunteer regiment, brigade, division or corps.

Congress has provided us with a new militia law, mainly through the initiative and influence of the organized militia. The practical benefits of this legislation and its value to the country rest largely in its intelligent and zealous administration by the War Department, as well as by the State authorities, but fully as much in the hearty unreserved co-operation of the officers of the regular army.

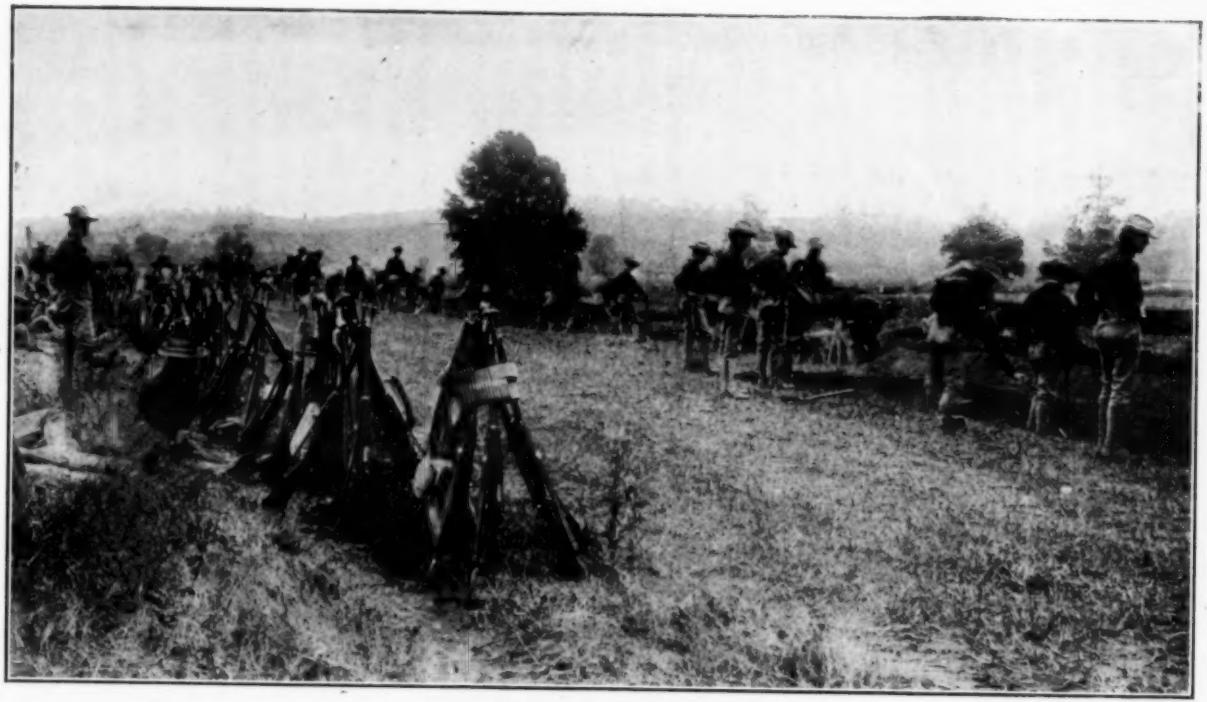
To many, the militiaman may be a new genus. The regular soldier is at his business 365 days in the year, and nothing bothers his head but soldiering. The militiaman drills a couple of hours an evening once a week for six months, say sixty or seventy hours in all. Soldiering gets into his head at the beginning of the drill and goes out again at the end. Meanwhile, he is the free and easy American citizen, occupied in gaining his livelihood. He may go into camp or take part in maneuvers for a few days in the year. At first, and until his mental machinery shifts from the civilian habit to the military habit, he may walk about, off duty, with his

coat unbuttoned. For fifty-one weeks of the year his coat has been unbuttoned when it pleased him. He talks a lot and makes a noise. For fifty-one weeks he has talked a lot and made a noise. He lounges in his gait. That is what he has been doing for fifty-one weeks. He doesn't always think or bother to salute his superiors. For fifty-one weeks he has only been saying "Good morning" or "Hello" to the other civilian who employs him, or to the foreman of his shop. And withal, he has been a good American citizen, faithful to his employer and to his life duties. Has been strict in conforming to the rigid discipline of the office, the factory, the workshop, the railway. A different kind of discipline, very effective in the gigantic organizations of industry, but not consistent with established forms of military discipline. In spite of all, given time and a proper orderly system of instruction, it is not difficult to mould him into a good soldier, many militia organizations being all that they should be.

The men who starved and froze at Valley Forge; the men who cut the British to pieces from behind the cotton bales at New Orleans; the men who stormed the heights of Chapultepec; the men who followed the Stars-and-Bars across the blood-soaked fields at Gettysburg, under the decimating storm of shot and shell; the men who lay grim and determined, pounded by a hundred guns and then rolled back the high tide of the Confederacy,—were just these militiamen, only with more training and continuous service.

Patriotic and wise is the regular officer, who realizes that in time of peace plans for putting armies into the field in war are made; that the citizen soldiery will compose those armies; who earnestly studies and understands the peculiar conditions which surround the militia service; who seeks and finds the means of lending the best efforts of his education and experience, whether as general officer or junior lieutenant, warmly and heartily, to the men who are serving their country gratuitously, through soldierly instinct.

My observations at the maneuvers this year near West Point, Kentucky, confirmed my former advocacy of this class of work for training officers and men, both regulars and militia, for practical field service. This was the first participation by bodies of the organized militia in maneuvers and field instruction, authorized under the new militia law. The regulars numbered about 2800, of which 924 were cavalry,



AUTUMN MANEUVERS—WEST POINT, KY.
Regular Infantry Entrenching.

and included two batteries of field artillery. The militia forces comprised about 7600 from five neighboring States. The terrain, about 30,000 acres, includes an unusual variety of topographical features, is sparsely settled, occasional frame farm houses, not greatly under cultivation and interspersed with pasture lands, patches of wood and undergrowth separated by Virginia rail fences, comprising a succession of rising and falling ground in all directions. The surface of the many roads was covered with a thin layer of fine, white dust in dry weather, which makes soft, splashy, liquid mud in the wet. From a military standpoint, it would be termed a close country, in the greater part of which opposing forces could approach within from two to five hundred yards of each other without exposure, and admitting of practically no long-range artillery fire, and only a limited range of infantry fire, differing in that respect from the open ground at Fort Riley, Kansas, where movements may be observed up to a couple of miles distance; a country for surprises and unexpected flank attacks by infantry and particularly by cavalry.

It is a typically American terrain as distinguished from central Europe, where almost connecting villages of masonry houses and walls, plentiful larders and granaries and broad, smooth, level roads create different and easier problems in marching, quartering and supplying troops and in their tactical handling.

The home stations of the organized militia were scattered over five States. Of the 129 company organizations, about all were one company posts, except four which ranged from three to eight companies. Although the entire force was scheduled to reach the ground on October 1st, delays were not surprising. Some trainloads were held over night, not delivered until the following forenoon. The men were obliged to subsist on the one day's travel ration issued. Many were more than thirty-six hours on the road.

The troops from Ohio, Indiana and Wisconsin had been several days in State camps during the summer, and the ranks in some organizations had been reinforced with recruits and former members.

From twelve to fifteen miles were covered on the first day's field work in which the militia took part, the weather being hot and the marching on the roads raising clouds of dust which aggravated breathing. The severest test of

unseasoned men commenced the following day. The greater part of the militia left camp in the afternoon to bivouac over night. Early in the night, they experienced a drenching downpour of rain, which lasted several hours, but ceased before the action commenced the next morning. In the afternoon, at the termination of the maneuver, the rain again came down in floods, the different commands marching back miles to their wet camps, some in good order, but others straggling; no complaints, however, and the men generally cheerful. A few did not turn up until the following morning.

From then on, as would naturally be the case, improvement in camp living, minor points of discipline and steadiness under arms took place.

All the operations were highly realistic and practically free from impossible situations. They were skilfully conceived, well adapted to prevailing conditions and satisfactorily worked out. As the great European maneuvers, employing from 25,000 to 90,000 men are, in effect, an aggregation of smaller maneuvers, such as those in question, I consider these equally valuable for instruction of men and officers, including brigade commanders and field staff, in fact as possessing the one great advantage of not holding large masses of troops passive in exterior reserves, but using all well up to the front.

I was impressed with the view that the terrain was too restricted to enable superior commanders to exercise their best abilities, as the physical features, becoming well known to them, it could be foretold with reasonable accurracy where each of the contending forces would be found and in what dispositions. Each side, occupying and starting from the same camp, although at different hours, had advance knowledge of the strength and composition of the other.

While many of the militia organizations showed lack of preparatory training, on the whole, the work was good. I consider it beneficial to all, from the general officer to the last private, each in proportion to his part and responsibilities. In any event, weak points were developed for remedy.

In order to prove certain conclusions of my own, I recently addressed a circular letter to all the company commanders of militia to learn as nearly as possible, the prevailing sentiment among officers and men—as to the special benefits of the maneuvers from the standpoint of training—in what particulars they found their commands to be uninstructed in advance,

preparatory to such maneuvers—what wider methods of instruction they proposed to undertake as the result of their experience—the satisfaction or otherwise of their commands with the work done—whether or not they could count on a high percentage of attendance on a future repetition of such duty—and satisfaction or otherwise with the army ration.

The replies were remarkable for intelligent thought. The following is a *resumé* of the practically unanimous views expressed:

The special benefits derived include practice in long distance travel, locating camps in strange country among large bodies of troops. The long marches, skirmishes, bivouacs, etc., were of great practical benefit to officers and men. The views of all were enlarged, the tendency at home stations and local camps being in the direction of narrowness. All were put on their own merits and a healthy rivalry created. On an enlarged territory, officers and men got a clearer idea of conditions of actual warfare and their interest awakened in such work, as distinguished from spectacular ceremonies and apparently aimless drills indoors and on level parades. Acquiring knowledge of caring for oneself under service conditions.

General complaint was made of the train service. On leaving camp, some organizations lay on the sides of the road, waiting from morning until dark before entraining, a condition not, however, unusual in war.

Almost all agree as to the necessity, at home stations, of drill on more practical lines—more extended order out of doors and theoretical and, as far as possible, practical instruction in minor tactics, and fire discipline over broken ground.

The enlisted men were generally well satisfied with the tour and a full percentage can be counted upon again.

The army ration was satisfactory in quality and quantity, with a few minor complaints.

Personally, I am impressed with the following views, in addition to those summarized above:

The United States Government having made liberal allowances for equipment, etc., no State should fail to provide for regimental or brigade encampments, at which should be given instruction of such a character as to prepare commands for the larger maneuvers, previous preliminary instruction having been had at the home station. These camps should be held alternating years with larger maneuver camps, and organiza-

tions which do not show sufficient preparatory training, should not be sent to these latter, which cannot be exclusively relied on to properly train forces deficient in elementary drill. The progressive course of instruction should be:

1. At the home station.
2. At State regimental or brigade camps.
3. At the joint Army and organized militia maneuvers.

It might be well to detail the officer, in each organization, who possesses the greatest aptitude, to prepare and deliver lectures on field training, minor tactics, etc.

The entire force of regular infantry and cavalry and militia were armed with the United States service magazine, 30-caliber rifle ("Krag"). Although these rifles had not been in the hands of some of the militia more than a few days, they experienced no difficulty in their use.

A feature of the maneuvers, well worthy of remark, was the revolution which smokeless powder has effected on the field of battle. There were seen there constantly troops under fire who were not conscious of it, and troops sheltered behind rail fences, firing volleys and at the same time affording no target for the enemy, because they could not be seen in the absence of smoke. This would not have been possible with the discarded black powder rifles, the use of which in such maneuvers or field practise even of a single company would utterly defeat the purpose of instruction and result in a totally false conception of tactical and fire conditions in the battle of to-day. This was emphasized by the fact that the artillery used of necessity, black smoke powder (smokeless powder not firing without a projectile) which prominently marked the position of guns at the first discharge. At the same time, I could not appreciate the supposed deadly effect of rifle fire in battle, there having been so much firing by the men at false ranges which, under the excitement and strain of actual conflict, might still continue to be the case, in spite of the accuracy of the new rifle, when coolly aimed and fired. In any event, the most recent wars have shown a decrease, rather than an increase, in casualties, the long range of rifles having resulted in such increase in depth and extension of lines and distance from the enemy.

I gained the impression that the efficacy of rifle fire would be almost in direct ratio to special advance instruction and practise in accurately gauging with the eye distances of

natural objects over broken ground and good fire discipline. In fact, I consider these of ultra importance over all other factors in a soldier's training, and depending upon them, assuming good battle tactics, battles will be won or lost.

I also believe that field artillerymen should be armed and trained with the rifle to themselves defend their guns, which in these days may be pushed well up to the front and subject to sudden attack.

Provision should be made for hire, transportation and forage of horses for mounted organizations, if brought from the home station, but these are apt to be too light in weight for artillery, and in any event, untrained. The United States Government might provide a full complement of suitable trained horses at the camp.

In all organizations, such shoes as are brought are usually worn out and useless at the end of such work, and are often of a kind unsuited to the service. As the pay of the private for the tour was but $5.20 when not supplemented by the State, as was the case with Michigan and Indiana, the United States Government might well provide shoes, and in my opinion woollen socks also, for each encampment, which would last over for military service at home.

Besides the Khaki uniform, which being washable, is best suited to these maneuvers, men should be provided with a change, in the event of wet weather.

As far as practicable, and at least until State troops are better instructed, it would serve a good purpose should brigades be made up of both regular and militia regiments, commanded by a regular officer. It is quite likely that on request, the War Department would send a body of regular troops to take part in a State encampment, or detail a regular officer to the staff of a militia brigade commander at maneuvers.

There being no provision of law for attendance at these maneuvers, of State militia officers for individual instruction or report, they are present solely by courtesy of the War Department, and are liable to be restricted to those only who can afford to pay their own expenses. The new militia law allows travel pay, allowance for subsistence and quarters to militia officers who may attend Army schools, but the number of those who will avail themselves of this privilege must be limited, men following actively civilian pursuits being more trained to gain knowledge by observation than by scholastic

studies. The law might well be amended to authorize the Governor of a State to nominate one officer for each 1000 or fraction of 1000 exceeding 500, of his forces, to receive the same allowances as provided for attendance at army schools.

The training of the organized militia has always impressed me as a mathematical proposition, in this wise:

Determine the number of hours yearly which can be devoted to instruction, then decide upon the essentials which may be taught with sufficient thoroughness during the given time. Leave nothing to a regimental camp or assemblage which may be taught at the home station, and nothing to the larger camps or maneuvers which can be taught at the regimental assemblage.

Whether elected or appointed, get good officers. That might be almost said to be the whole thing. Work up favorable sentiment among the people and legislators of the State by organized effort and deserving their support. Acquire the habit of *thinking* along soldierly lines of thought. Stimulate the *morale* of the command, above all things, as the true basis of discipline.

There is undoubted activity in the right direction in all the States to meet the changes brought about by the new Federal militia law. With a clear understanding by the War Department and regular officers of the peculiar conditions surrounding the militia service; with proper financial aid on the part of those States which have been heretofore delinquent in that regard; with increased appropriations by the Federal Government; with systematic and orderly instruction in each subdivision in each State; with patient and persistent work on the part of all; within a few years the United States will have ready for any emergency, the finest body of citizen soldiery in the world.

NOTES ON CAVALRY MOUNTS.

By Brig.-Gen'l HENRY T. ALLEN, Chief of Constabulary, Philippine Islands.

PERIODICALLY appear expressions on the part of Army officers recommending Government stud farms where horses may be bred for cavalry purposes. From many points of view this measure commends itself and I do not doubt that good mounts could be secured by it. The attempt on the part of the Government to breed its own horses would, however, be opposed to our traditions and not in harmony with the decentralized policy of a Government where all possible is left to the initiative of individuals. The measure would be not only unpopular with horse breeders, but would be bitterly opposed by them. Under present conditions, it is not deemed wise to push this method.

The following is the outline of a system partially under Government supervision, that it is believed would be satisfactory and one that should commend itself to horse breeders and mounted officers. By this, contracts would be given to breeders for horses conforming to required specifications, from sires and dams approved by Quartermasters or other officers detailed for the work.

Presenting this in a concrete form: It would be necessary to find certain horse breeders in favored parts of the Middle States or Middle Western States—in any event in localities near large cavalry garrisons—who would agree to furnish sound four-year olds, solid colors, broken to saddle, and not less than fifteen hands high, from sires and dams to be selected by the officers designated. For properly bred horses delivered at garrisons the Government could well afford to pay twenty to thirty per cent. above prevailing contract prices, which do not include delivery.

Admitting that the ideal cavalry horses are hunters which can carry weight at stiff paces over rough country for long periods, every effort should be made to produce such animals in numbers for our service. The sooner we get away from the so-called "typical cavalry horse," with his short coupling and big barrel—in most cases an overgrown pony that will strain itself in a five-mile gallop at a pace that would be at the normal stride of a real charger—the better it will be for the mounted service. In fact, if a horse has good broad loins, his length of body will never be too great.

It is not believed that proper types can be obtained from thoroughbreds alone, for the simple reason that they are not strong enough. It will be necessary, therefore, to cross standard-bred stock with the thoroughbred, special attention being given to size, strength and temperament. It would be unfortunate to start with stock of vicious temperament, because it would entail double work and time in training.

There is a difference of opinion as to whether the thoroughbred strains should come from the dams or sires. In my opinion, both ways should be practised until something definite be ascertained. It does not follow from what is stated here that only thoroughbreds or standard-bred sires and dams could be used; but it is important that the strains be known and that enough good blood be in them to produce at least half thoroughbred offspring.

While stationed at Fort Riley I took up this matter of breeding cavalry horses with two local stockmen, who readily assented to the proposition, provided a contract could be made with the Quartermaster's Department to be effective about four years beyond the fiscal year appropriation. Perhaps that would require special legislation. The breeders in question agreed to be responsible for everything connected with the purchase, care and maintenance of the farms, to permit any Army officer to select within reasonable limits the sires and dams, and in general to supervise the breeding and selection of strain, on condition that they receive twenty-five dollars above the then existing contract price for their four-year-olds, delivered at the post and conforming to specifications.

Under these conditions the breeder would have a sure market for his stock, and the Government, without any risk whatever, would be encouraging the breeding of good horses and would be securing at a most reasonable price what it needs in order to maintain a high-grade mounted service

Following this still further it would be advisable that the mounts furnished by the various contract farms be turned into a horse-recruit school at the nearest large cavalry post, where they should receive at least three months' training.

Provided the breeders, who should be bonded, get lawful assurances that their mounts will be received when duly delivered, there should be no difficulty in making a beginning in this important matter.

INFANTRY DRILL REGULATIONS.

By Captain E. P. PENDLETON, 23d Infantry.

"The formation to which troops have been accustomed in peace should be preserved in war."—*Goltz.*

ASSUMING the foregoing to be true, are we not wasting time with double rank? Its use is mostly confined to the parade ground or the avenue. It is not necessary anywhere. The cavalry dismounted have dropped it altogether. I am aware that lines of sections and squads in double rank are advocated theoretically and actually prescribed in the drill book. A section will rarely have more than three squads. Its front will be about ten yards in double rank. In single rank with no blank files, if the men close shoulder to shoulder, the front would hardly be more than fifteen yards. No man would be more than ten yards from his section leader. It would seem that control would be as easy as before. A single projectile could rarely hit more than one man. It would be almost sure to hit two in double rank.

The great advantage would be that after a few drills the recruit would be prepared for battle exercises. He has nothing more to remember so far as mechanical drill maneuvers are concerned. Nor is any drill movement or maneuver needed. No command to form for attack. The proper subdivisions are moved forward to form a firing line. No command *as skirmishers*. The men may open out to any interval. Each man has the same number and relative position which he had at the last formation of the company. Even the scouts may be composed of a number of fours, each with its original formation. How much simpler! How much time saved in the instruction of new levies!

In my opinion our drill is also defective in not containing provisions for advancing from the center of units and subdivisions. In a battalion of war strength, in line of companies in columns of fours, to form line the rear fours must march almost a hundred yards. If each company executed *center forward, twos left and right* the column would be the same, and in forming line the rear twos would march just half the distance. Nor is

that all. If attacked before the movement is completed the men can halt in their tracks at any stage, and be in a good tactical formation. Not so with the movement in the book. A command of any strength on the road, if attacked must be broken up, or else line must be formed, then line of squads, skirmishers, etc., with great loss of time. Even then they would be facing in one direction only. If in single rank advanced from the center, each man may halt in place and without a break fire can be opened at once in all directions. Any modification of the formation is practicable and quickly understood by the recruit.

To form column of twos on the center: *Center forward. Files left and right.*

Column of fours: *Center forward. Twos left and right.*

File closers to head and rear of column. In battalion prefix: *Companies* and restore Upton's old movement: *Center forward. Fours left and right.* Drill exercises to be limited to movements used in campaign.

THE SUPPRESSION OF DUST IN MILITARY CAMPS.

By Captain S. D. ROCKENBACH, 12th U. S. Cavalry.

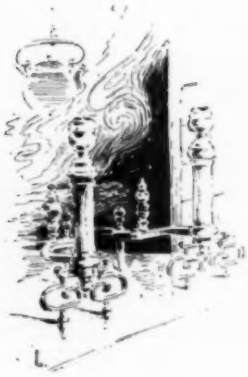
A RECENT trip through Southern California attracted the writer's attention to the success that has resulted from the experiments which have been made by the Santa Fé Railroad and the towns along it, for the suppression of dust by the use of crude petroleum. The Santa Fé Railroad, for a thousand miles from San Francisco, sprinkles its track with crude petroleum twice a year, using a special engine and sprinkler, as the oil must be kept off the rails. The result obtained is remarkable; where formerly the traveler rode with car windows tightly closed, suffocating by dust and heat, he can now ride in comfort, with windows open, getting all the breeze due to the motion of the train, and free from dust. The streets of Los Angeles, towns along the Santa Fé Railroad and the drives in the Golden Gate Park are sprinkled twice a year with crude oil; the results are even more remarkable than on the railway. Streets that formerly were a foot deep in sand and dust which by the slightest wind was driven into the houses, no matter how tightly closed, making them all but uninhabitable, are now firm, hard streets free from dust. The houses and verandahs are occupied with comfort. An examination of an oiled street finds what appears as a baked crust about a quarter of an inch in thickness, and strong enough to resist breaking by the hoofs of horses and the ordinary carriage tire. The oil is absorbed by the earth for a depth of four or more inches, so that the street appears as if it had been recently sprinkled with water. This, bear in mind, is the effect on a loose sandy road which has had no preparation except to grade it and give it a proper cross-section.

Suppose the streets of the camps in the United States during the Spanish-American War had been sprinkled with oil. Those who lived in those camps know they were uncomfortable, dirty, and the writer believes unhealthy, largely due to dust. The oil not only would have suppressed the dust, but would also have driven away many flies and mosquitoes. The objections to the oil are its cost and odor; but had the

camps been relieved from the dust and flies, such a trifle as a clean though slightly unpleasant odor would not have been considered. The cost is small compared to the benefits received. The oil is cheap and is conveniently shipped in tank cars holding 9,400 gallons. The sprinklers for the application of the oil cost but little more than a good street sprinkler, and when it is considered that one or two applications would put the camp streets in good condition for at least a year, without the usual constant water sprinkling, the writer doubts if the use of oil would be found expensive. Given a good longitudinal drainage and cross-section and then well rolled, an earth street oiled has no mud in rainy weather.

Oiling the streets of our camps of instruction should be tried. The fine gravel, chert, and Macadam roads of Chickamauga Park which in the summer and fall months are, under heavy traffic, badly ground to dust, making tents near by dirty and uncomfortable, would if oiled be kept free of dust and preserved against much wear and tear.

CAMP JOSSMAN, GUIMARAS, P. I.,
September 6, 1903.



Historical Miscellany.


SECOND DRAGOONS
T.F.R.
COOKE
PALMER
BEALL
GRAHAM
BUFORD
TERRIT
MAY
WINCHESTER

FORT HUUCHUCA, A. T.

FROM ARIZONA TO THE ANTILLES WITH THE SECOND CAVALRY, 1898-1902.

By Colonel HENRY E. NOYES, U. S. Army.

IT is not my intention to write of the Second Cavalry from the time I joined it, over forty-two years ago, as its history for the greater part of that time is in General Rodenbough's "Everglade to Cañon," and the sketches by General Bates and Major McClernand in the Journal Military Service Institution for May, 1892; but a few statistics and general remarks covering that period may serve as an introduction to the sketch I shall give of its service during the last four years.

As I was assigned to the regiment in June, 1861 (then called 2d Dragoons), the first register in which my name appeared was that for September, 1861; there were then thirty-three officers in the regiment, with Col. Philip St. G. Cooke at the head of the roster, and my name near the foot of the list. Looking forward then, the distance between us seemed so great that I hardly expected to live to attain the rank that he then held, still less to become the colonel of the

regiment; and had anyone asked me then what was my highest ambition, I would have answered without hesitation, to be the colonel of this regiment. May 31, 1898, I succeeded Col. G. G. Huntt, and I was then the only survivor on the active list of all those who had served with the regiment in the Civil War. Of the survivors of that war from our regiment seven are now on the retired list, viz: Gens. L. P. Graham, T. J. Wood, Wesley Merritt, T. F. Rodenbough, John Green, Cols. David S. Gordon and Henry E. Noyes, while some two or three others are in civil life.

Since the Civil War but one of its eight colonels became a general officer—Colonel Huggins—and he was immediately retired; one of its lieutenant-colonels also attained that grade—Carpenter—and was retired soon after; one of its majors—Wheaton—became a brigadier in 1892, and was retired as major-general five years later; two of its captains—Merritt and Bates—became general officers, the former while colonel of the 5th Cavalry, the latter from the Pay Department, of which he is now the head.

From the time that he joined the regiment until he was retired, the writer served in it in every regimental commissioned grade except that of major. During this time there were approximately two hundred and twenty (220) officers in the regiment; deducting the fifty on the register for 1902, there remain one hundred and seventy (170) to be accounted for. Thirty-five of them are serving in the staff corps or other regiments, sixteen are on the retired list and a few are in civil life; leaving about one hundred and twenty (120) who have answered their last muster and joined the great majority.

Colonel Cooke was succeeded by Col. Thomas J. Wood, November 12, 1861. He retired in 1868, and was succeeded by Col. Innis N. Palmer, who was retired in 1879, and was succeeded by Col. John W. Davidson, who retired in 1881, and was succeeded by Col. John P. Hatch, who retired in 1886, and was succeeded by Col. Nelson B. Sweitzer, who retired in 1888, and was succeeded by Col. David R. Clendening, who retired in 1891, and was succeeded by Col. George G. Huntt, who retired May 31, 1898.

January 1, 1892, the regiment was stationed as follows: Headquarters and Troops C, D, H, L and M at Fort Wingate, New Mexico; Troops A and E at Fort Bowie, Arizona; Troops B and I at Fort Huachuca, Arizona; Troop F at Fort

Leavenworth, Kansas; Troop G at Fort Stanton, New Mexico; Troop K at San Carlos Agency, Arizona.

From January, 1892, to January, 1898, was a period of general inactivity. During the last two or three years of this time, six troops of the regiment were at the cavalry school at Fort Riley; and when ordered from there to Camp Thomas, Georgia, in the spring of 1898, were probably the best drilled and disciplined troops in the army; at least that is the opinion of a cavalry officer who served at Riley, and has had thirty-three years' service.

1892 —Troop A left Fort Bowie April 4th, for duty as escort to the International Boundary Commission, and arrived at its camp No. 3, near Columbus, New Mexico, April 12th; a few days later the camp was removed to Mosquito Springs, Mexico, where it remained until May 21st, and then moved to Dog Springs, New Mexico; and thence to Whitewater and San Francisco Springs, New Mexico; June 29th camp was moved to Lang's Ranch, New Mexico, and thence to Guadelupe Springs and San Bernadino, Arizona, arriving there July 24th; distance marched from Fort Bowie, 321 miles. The troop was relieved from this duty August 10th, and ordered to Fort Wingate, where it arrived September 1st; distance marched from San Bernadino, 260 miles.

Troop D left Fort Wingate May 12th for duty as escort to the Navajo Commission and marched 118 miles during the month; started on return June 3d, via Fort Defiance, and arrived at Fort Wingate June 10th; distance marched, 135 miles.

A detachment of eight enlisted men of Troop B, under charge of Sergeant Ehrich, left Fort Huachuca May 29th, to scout through the Whetstone Mountains in search of Kid, a renegade Apache, and returned June 2d, having marched 130 miles.

A detachment of eighteen enlisted men of Troop E, under command of Lieutenant Harrison, left Fort Bowie May 29th to scout south of that post, and returned June 7th; distance marched, 277 miles.

A detachment of eight enlisted men of Troop I, under charge of Sergeant Tolm, left Fort Huachuca May 24th, to scout through the Santa Rita Mountains for renegade Apaches, and returned June 2d; distance marched, 125 miles.

A detachment of nine enlisted men of Troop K, under

charge of Lieut. A. M. Fuller, left San Carlos in search of the renegade Kid, May 26th, and returned May —.

A detachment of nineteen enlisted men of Troop K, under charge of Lieutenant A. M. Fuller, left San Carlos June 3d and scouted through the Pinal and Superstition Mountains, following the trail of the renegade Kid until June 10th; distance marched, 200 miles. Troop K was relieved from duty at San Carlos and ordered to Fort Bowie, arriving there June 22d; distance marched, 120 miles.

Troops E and K left Fort Bowie, October 26th, in pursuit of Apaches, and returned November 12th. Troop B was transferred from Fort Huachuca to Fort Bowie November 15th.

Troop G was transferred from Fort Stanton to Fort Wingate, arriving there December 10th.

Troop I left Fort Huachuca November 22d for Fort Bowie, arriving there November 25th.

Colonel Huntt, Major Rafferty, Lieutenant Carleton and Troops A, D, G and H left Fort Wingate December 20th for Zuni Agency, and arrested some Zuni Indians, and returned to Fort Wingate December --; distance marched, forty-five miles.

1893—During January, February and March the troops remained at their stations. April 29th, Colonel Huntt, Major Rafferty, Lieutenant Brett and Troops A, D, G and H, left Fort Wingate for Fruitland, New Mexico, to suppress a threatened outbreak of Navajo Indians; May 10th, the command left for Fort Wingate, leaving Troops A and D there until June 20th, when they were relieved by Troop C, which remained there until November 5th.

1894—During January, February, March, April and May the troops remained at their various stations. Troops A and D marched to the American Valley, June —, and arrested ten Navajo Indians. Troop F was transferred to Fort Riley, September —. Troops A, C and D were transferred to Fort Riley October 11th. The other troops remained at their stations during the balance of the year.

1895—January 1st the regiment was stationed as follows: Headquarters and Troops E, G, H, K, L and M, Fort Wingate; Troops A, C, D and F, Fort Riley, Kansas; Troops B and I, Fort Logan, Colorado. They remained at their stations during the year, excepting Troops E and H, which were in a camp of

FORT WINGATE, N. M., 1896. AFTER THE FIRE.

instruction at Albuquerque, N. M., from September 16th to the 20th, and en route to Fort Wingate during the balance of the month and until October 2d.

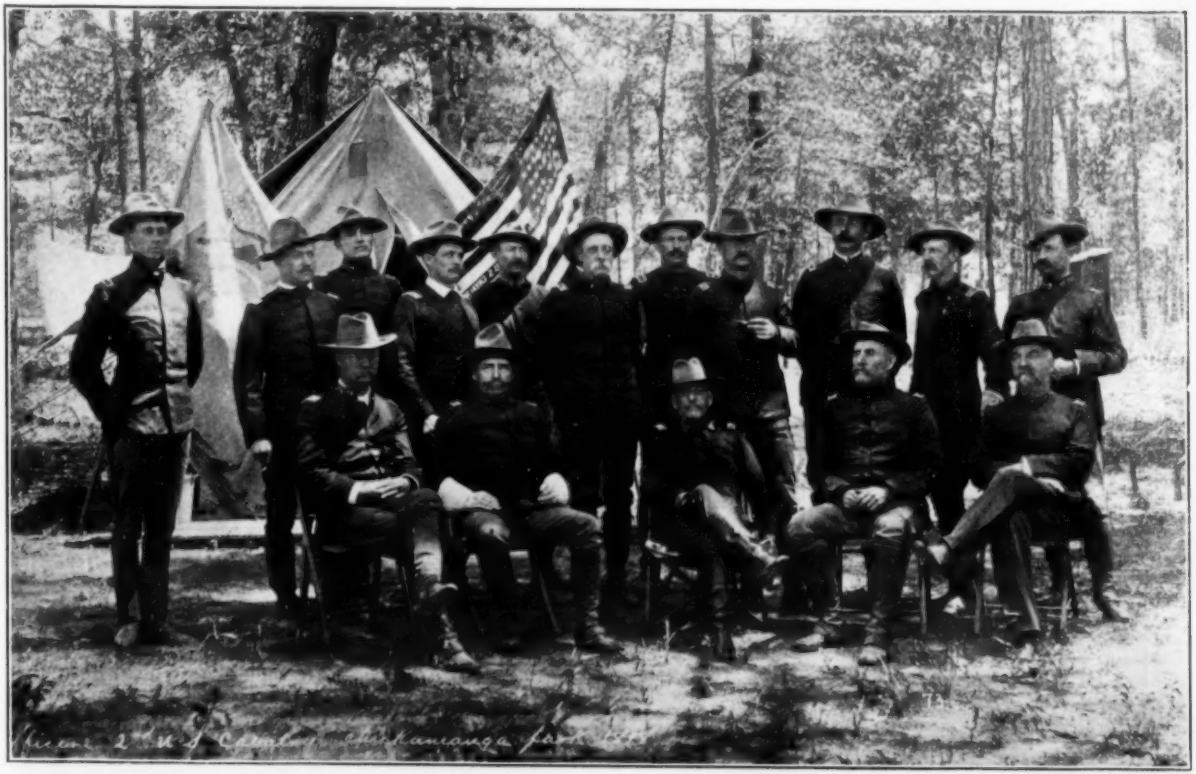
1896—January 1st, the regiment occupied the same stations as in 1895. April 26th, Troops E and K left Fort Wingate for Fruitland, New Mexico, arriving there April 29th, and returned June 30th. Troops G and H left Fort Wingate for Fort Riley, August 10th (by rail), and arrived there August 12th. Except for occasional practise marches, the troops remained at their stations during the remainder of the year.

In August of this year, Fort Wingate had a disastrous fire, which destroyed all the barracks, the chapel, administration building and four sets of officers' quarters. All the buildings on the north side of the parade, and all on the east and west sides, excepting one on each side, were burned. This caused the transfer of Troops G and H to Fort Riley; the rest of the command lived in tents until new barracks were built.

January 1, 1897, the regiment occupied the same stations as in 1896, except that Troops G and H had been transferred to Fort Riley. They remained at their stations during the year, except when on practise marches or in small detachments from Fort Wingate sent to the Zuni Agency.

January 1, 1898, found the regiment (with 26 officers and 600 enlisted men present) stationed as follows: Headquarters, Band and Troops E, K, L and M, at Fort Wingate, New Mexico (L and M being skeleton troops were Indian Scout troops); Troops A, C, D, F, G and H at Fort Riley, Kansas, and Troops B and I at Fort Logan, Colorado. A detachment of Troop E had been at the Zuni Indian village, about forty miles from Fort Wingate, since December, 1897, at the request of the agent there; February 27, 1898, it was relieved by a detachment of Troop K, which was relieved and returned to Fort Wingate, March 14th.

During the early months of the year the war fever was increasing rapidly and culminated when the Maine was destroyed in Havana harbor, making war virtually a certainty. The regulation interval between wars (a generation) had more than elapsed since the Civil War, and however much, on general principles, war was to be deplored, the veteran as well as the late recruit hailed with joy the prospect of active service, especially as it was to aid an oppressed people to gain their independence; the grinding monotony of garrison



OFFICERS OF THE REGIMENT IN THE SPANISH-AMERICAN CAMPAIGN.

service, far from civilization, was to end, at least for a season. Early in April, as we saw by the press dispatches, regiment after regiment ordered to the Gulf States for active service, but no orders for us, we feared we were forgotten, or to be left to quiet the usual demands for 'protection' by the frontier settlers; but our fears were groundless, as orders finally came directing us to proceed to Camp Thomas, Chickamauga Park, Georgia, where we arrived April 26th; the detachments from Forts Riley and Logan had arrived several days earlier, and we found them comfortably settled in camp when the Wingate troops arrived there. This was the first time that the regiment (as then organized) had been all together since the Civil War ended, nearly thirty-three years before.

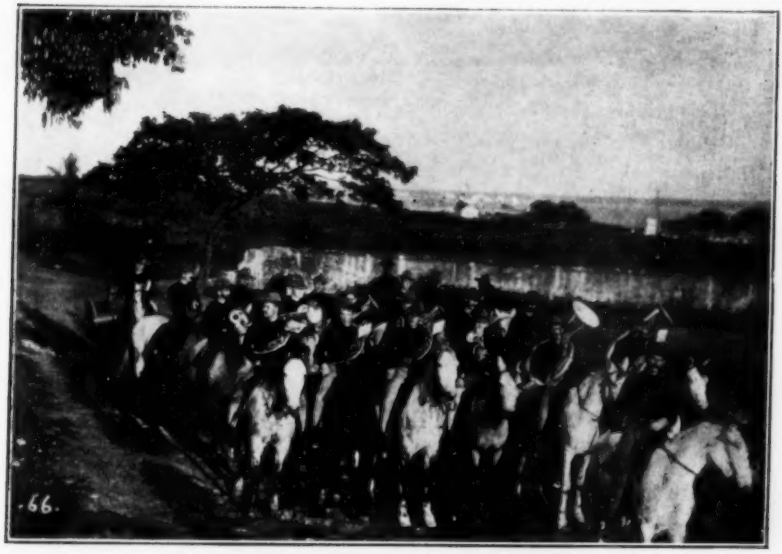
En route from Fort Wingate we soon found that the whole of the country through which we passed was full of the war fever; crowds greeted us at every large station during the days, and wherever we were delayed the band played patriotic airs, to which the crowds responded by cheers. Our route was via Kansas City, Cairo and Chattanooga; through Missouri, Kentucky and Tennessee; we gave them "Hail Columbia," "Dixie" and "Yankee Doodle," alternately; the general enthusiasm reminded us of similar scenes at the commencement of the Civil War.

We remained at Camp Thomas about two weeks, completing our preparations and impatiently awaiting the next move to one of the Gulf ports. We daily met many of our old Civil War comrades, some of whom we had not seen since 1865, and most of whom we had last known as young men barely out of their teens, but now grown gray in the arduous service of the many Indian campaigns since then; but all looked hale and in good condition for anything that the future might have in store for them.

We spent most of our spare time in strolling through the historic grounds where we were camped, inspecting the monuments and other mute testimonials of the gigantic struggle of Sherman's veterans, and could but think that if anything was needed to inspire the younger element congregating there with enthusiasm for the cause they were enlisted in, this camp ground would furnish all that was necessary.

Brigades and divisions were organized here, and as Colonel Huntt was assigned to command a brigade of cavalry I became the regimental commander. At this time there were

twenty-nine officers and six hundred and fifteen enlisted men present (Troops L and M being still skeletons). The regiment was ordered to Mobile, Ala., May 11th, to which place we proceeded by rail, arriving there two days later. Troops L and M were re-organized there and filled to their war strength, and for the first time since the Civil War, the whole regiment of twelve troops was united under command of its colonel. This had never happened before, as during the



SECOND CAVALRY BAND, EN ROUTE.

Civil War the regiment was commanded by a major or a captain, most of the field officers being general officers of volunteers.

A few non-commissioned officers and old soldiers were transferred from the other troops to serve as the nucleus of the re-organized skeleton troops; and as fast as the recruits were assigned to them they were given all the instruction that could be crowded into the limited time available; but some equipments were lacking for a reason that will be apparent later.

As the state of his health was such that a summer campaign in the tropics was not considered advisable for Colonel

LES VIEILLES MOUSTACHES.

Huntt by our surgeons, he was retired May 31st on his own application. He had been our colonel over seven years and we were sorry to lose him on the eve of an active campaign, but we all recognized the wisdom of his decision, although regretting it. We remained in camp near Mobile until June 3d, and while there saw many things to remind us of early war times in 1861. Whole regiments of volunteers in civilian clothes, without arms or equipments, being instructed in the rudiments of soldiering by their officers, armed with sticks in lieu of swords; and we frequently heard the same old question that we heard so many years ago down in old Virginia, from some stray recruit, "What rē-gē-mĕnt' boys?"

As we were daily expecting and hoping for orders to embark, there was some lively rustling to equip our recruits, several hundred in number. After what seemed an endless delay, the order to embark finally came; and while we were sorry that the other cavalry regiments had to leave their horses behind, we rejoiced that the Second Cavalry was selected to be the only mounted regiment for the expedition; but our joy was premature, as the stock carrying capacity of the transports was soon found to be sufficient for only one of our squadrons; Major Rafferty's squadron was selected, and numbered eight officers and two hundred and sixty-seven enlisted men, with two hundred and fifty-five horses; and embarked on the transports *Matteawan*, *Morgan* and *Stillwater*, and sailed June 4th, as we then supposed, for Cuba. The next day the rest of the regiment left Mobile by rail for Tampa, where we arrived June 6th, and found that all the transports that had loaded at Mobile had sailed for Tampa instead of Cuba; they stayed there about a week and then anchored in the lower bay, where they remained until June 14th, when they sailed for some Cuban port—just which one was, of course, a State secret. Two squadrons of each of the other cavalry regiments had embarked dismounted, leaving their horses in care of the third squadrons.

Before leaving Mobile I was advised of my promotion to the colonelcy of the regiment which I joined as a lieutenant thirty-seven years before; this was very gratifying, especially on the eve of an active campaign. When we left Mobile for Tampa it was understood (but not from any official assurance) that on our arrival at Tampa we would find transports for embarking the rest of the regiment; but we were grievously disappointed,

CAMP THOMAS, 1898.

as each succeeding day developed the fact that the transports were insufficient for the available troops. As I was the junior colonel I could not claim any preference and had to take what came to me without grumbling, remembering that "they also serve who only stand and wait."

As the day for sailing came nearer there was great competition for billets to the few transports remaining available, each regiment not already billeted striving to get the next available steamer. The troops were embarked at Port Tampa, about ten miles south of our camp near Tampa; all the baggage had to be hauled from the camps to the railroad, the distances varying according to the location of the various regiments. The 1st U. S. Vol. Cavalry was camped near our regiment. Late one night (it must have been after midnight) I was awakened by a call from the quartermaster of that regiment, who informed me that they had just received orders to load for Port Tampa at once, and that they had no wagons to haul their ammunition, rations and other baggage to the cars, and wished to get ours for that purpose, and as soon as possible, as they might lose their chance to go if delayed in loading. As we had no orders to embark, our teamsters were routed out of bed, and soon had their teams ready and hauled the baggage to the cars.

The service of Colonel Rafferty's squadron during the Santiago campaign will be described hereinafter.

The transports arrived near Santiago June 20th. Two days later the squadron landed at Baquiri, leaving the horses on the steamers until the 23d and 24th, when they were brought ashore, twenty-five being lost by drowning, or disease en route. The next day they marched twelve miles to Field Headquarters, and two days later to Aquadores Creek, where they encamped.

Let us now return to the other two squadrons left in camp at Tampa. Being the ranking cavalry officer present I was put in command of what was called a provisional cavalry brigade, which included all the cavalry left at Tampa. As the other regiments had left all their horses and taken most of their efficient men, the proper care of the horses was quite a problem for some of them; but we managed to get them exercised regularly, although they would not have always passed inspection for grooming. As the 2d Cavalry had only its proper proportion of horses, we were not handicapped in that respect.

During our stay at Tampa we had frequent fishing excursions and other diversions to vary the monotony of camp life. On one of these, Colonel A—— (then Captain A——) had an experience that was quite exciting. As the fish were not biting he thought he would take a nap, and made a half-hitch of his line around his wrist; he soon awoke with a yell which brought several of us to his aid, finding that a shark had his line, from which we could not free his wrist before a deep cut warned him that he could not enjoy fishing and sleeping at the same time. Well do we remember how difficult it was to get past his tent, on our way to Tampa, without helping him "splice the main brace."

Tampa itself had few attractions, so far as we could see. Like all towns near which large numbers of troops are camped, it soon became very dusty and dirty, although the hotel was a decided contrast in that respect to the rest of the town.

During the encampment at Tampa, Troops B and G were detached, the former to participate in the expedition to Porto Rico, the latter as guard and escort at headquarters 4th Army Corps, from July 23d. Troop B embarked on the transport *Whitney*, July 22d, and arrived at Ponce August 2d, and encamped near headquarters, performing escort and courier duty during the campaign; and returned to Ponce to take the transport *Michigan*, November 26th, when it left for Savannah, arriving there December 1st; and thence by rail for Huntsville, where it arrived December 3d; distance marched, about 2000 miles.

During the months of May and June the regiment had been recruited to its war strength, but the horse equipments could not be procured when we were expecting to embark, nor even later, although some volunteer regiments were completely armed and supplied with the very equipments that we needed, but could not get. Some months later, in answer to inquiries on this subject, we were informed by an officer of the ordnance department, who was in a position to know the facts of the case, that orders were given to equip certain volunteer regiments first, thus leaving some regular regiments unequipped until the emergency had passed. This is fully confirmed in the article published in the *Journal of the Cavalry Association* for December, 1899, by Lieutenant Harbard. The equipment of one regular regiment (and perhaps others) was not completed until one of those favored

TROOP "G," SECOND U. S. CAVALRY.

regiments was mustered out and some of its equipments reissued to complete the equipment of the regulars. This may have been good politics, as stated by the author of the article referred to above, but it was not war.

As we were camped on low ground, near a swamp, many of our mem became sick; to remedy this we moved camp to higher ground, but this did not reduce the number of sick as much as was anticipated. We soon heard the good news of the success of the Santiago campaign and looked forward to the early return of our comrades, and all the more anxiously when we heard of the inroads made by camp and climatic diseases; our anxiety was somewhat relieved when we heard of the intention to move them to some camp in or near the Northern States for recuperation. The large percentage of sickness at Tampa was no doubt a factor in the problem, and the approach of the rainy season emphasized the necessity of a change for all. Early in August the troops at Tampa were ordered to Fernandina, Florida, where we arrived August 4th, but remained only about a week.

Although the 2d Cavalry was brigaded at Camp Thomas, the squadron that went to Cuba remained an independent command, receiving orders direct from headquarters. When the Santiago troops were ordered to Montauk Point, the detachments of the regiments of the cavalry brigades left at Tampa when the expedition sailed were included in the order for Montauk; but the order for the cavalry at Fernandina did not include the 2d Cavalry; as we had a large sick list, increasing daily, and needed the change of climate as much as the other troops, representations to that effect soon brought the order for us also; we had taken all our sick from Tampa to Fernandina, where the Sisters of Charity provided comfortable quarters for them during the week that we were there. Before leaving we raised a generous fund to repay, in part, their kindness and attention to our sick. It is creditable to the regiment to note that ours was the only regiment that took its sick with it on leaving Tampa.

We took the cars from Fernandina August 4th and arrived at Montauk four days later, and were soon settled in a comfortable and healthy camp. Two weeks later the squadron from Santiago arrived and was escorted to the detention camp by the other two squadrons, and after a few days of quarantine moved to the regimental camp. Although the other

squadrons still had a large sick list, they looked healthy compared with those who had just come from Cuba; the malarial fevers that our men had had at Tampa, and from which most of them soon recuperated, were trifling compared with the debilitating fevers contracted at Santiago. Some of the officers and many of the enlisted men who were able to travel were furloughed to recuperate at home, in order to relieve the hospitals and make better conditions for those who remained.

During September the regiment (except Troops B and G) remained at Camp Wikoff, which was admirably adapted for the recuperation so much needed after the summer in the tropics under conditions so unfavorable to their health. The fresh breezes from the ocean, charged with health-giving qualities, constantly blew over the camps from the Atlantic, which was in sight of most of them and quite near some; we were refreshed by them during the day, and at night lulled to sleep by the monotonous booming of the waves as they broke on the sandy beaches near the camps.

Soon after the regiment was reunited at Montauk General Arnold, who had been commanding the 2d Brigade of the Cavalry Division, was granted leave of absence; as I was then the senior colonel present for duty I claimed the command, but my claim was not recognized; but as soon as the officer who had decided against my claim was succeeded by the next in rank he promptly remedied the injustice by the following order:

HEADQUARTERS, 5TH ARMY CORPS
CAMP WIKOFF, LONG ISLAND,
September 14, 1898.

SPECIAL ORDERS
No. 90—Extract

* * * * * * * * * * *

7. Under the provisions of Paragraph I, general orders No. 86 cs., Headqrs. of the Army, A. G. O., the following-named officers are hereby assigned to the commands exercised by them, from the dates set opposite their respective names.

* * * * * * * * * * * *

Col. Henry E. Noyes, 2d Cavalry, to the command of the 2d Brigade, Cavalry Division, 5th Army Corps, to date from September 9, 1898.

By command of Major-General Bates,
(Sgd.) E. J. MCCLERNAND, A. A. G.

With just enough duty to give men and animals all the exercise they needed, and a complete change of diet, our well

men became better and the sick improved rapidly. The camp was flooded with fresh vegetables, fruit, eggs, milk and other things so common in civil life as to be considered necessities, but which were veritable luxuries to our soldiers compared with what they had been having. Visitors thronged the camp from far and near, bringing dainties of all kinds, and many of them seeing for the first time a large army in camp just returned from an arduous though brief campaign; their curiosity at the unusual sights no less amusing to us than the sights were interesting to them. But there was a sad side to this picture—the cemetery and immense hospitals which crowned the hills back of the camp, where the dead and dying bore grievous testimony of the cost of war, even to the victors. For so brief a campaign, the sick list was appalling.

Early in September the question of winter camps for the army in the Gulf States was agitated, and the regimental commanders were assembled for consultation on this subject. As I had served with a cavalry command during the Civil War, which wintered in Alabama the last winter of the war, I was well-informed on the subject and suggested several locations, one of which was selected for the cavalry—Huntsville—to which place we were ordered later.

About the middle of September I became ill and was advised by the regimental surgeon to take a sick leave, which was granted me September 21st; this was twice extended to December 25th, when I rejoined the regiment. During my absence Major Wallace was in command, Lieutenant-Colonel Rafferty being absent on sick leave.

The regiment arrived at Huntsville early in October and remained in camp there four months, performing the usual camp duties. Troop B joined from detached service (in Porto Rico) December 3d. Troop G was still detached, at Headquarters 4th Army Corps, since July 23d. During the winter months quite a number of the families of the officers spent some months in Huntsville, finding homes in hotels and boarding-houses, and by their presence helped to pass the time more pleasantly than winter camps generally permit. As the time for our probable departure for Cuba approached there were anxious inquiries as to whether the ladies would be allowed to accompany the regiment to Cuba. I gave no encouragement to the proposition, as I did not believe in allowing women and children to accompany troops on foreign service until we

knew more as to the actual conditions of that service than we then knew; but the question was settled in favor of the ladies by a higher authority.

January 1, 1900, we had twenty officers and 1061 enlisted present. January 31st, Troops A, C, D, F, G and M, under command of Lieutenant-Colonel Rafferty left by rail for Savannah, where they embarked on the Manitoba for Matanzas, arriving there early in February, encamping about four miles from the city. The rest of the regiment remained at Huntsville until February 12th, when it left by rail for Savannah, and embarked for Havana and arrived there February 18th; after landing a detachment of recruits for the Matanzas Troops, we sailed for Cienfuegos, where we arrived February 21st. We made a temporary camp near the landing, until a suitable camp ground could be found; one selected by an infantry officer, twelve miles from Cienfuegos, was examined, but it was not half large enough; a few days' search showed no good camp ground at the desired distance from the city, and a site less than a mile distant was finally selected, and preparations made for a healthy and comfortable camp; tent floors were made two feet above the ground, and all necessary sanitary precautions taken, and by the end of March we had a good camp.

(To be continued.)

THE SUB-TARGET GUN MACHINE.

(The Scientific American.)

A MOST interesting exhibit at the recent meeting of the National Rifle Association, at Sea Girt, N. J., was the sub-target gun machine, an illustration of which appears herewith.

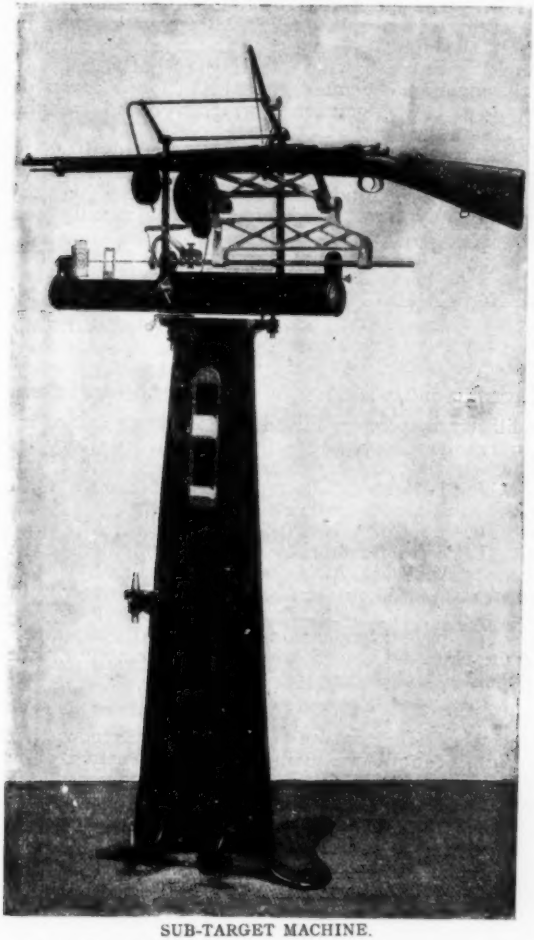
This machine is designed, primarily, to instruct recruits in the art of rifle shooting, although, as a matter of fact, it is in daily use by expert riflemen, who find it of great advantage in keeping in practice without the necessity of frequent visits to outdoor ranges. No ammunition is required, and the machine may be operated in the armory or at home.

By reference to the illustration, it will be noted that the apparatus consists of a sub-base or stand; a carriage base adjustable by locked vertical and horizontal screws; a ground-steel carriage rod, having at the target end a steel scoring-needle accurately spring-balanced on ground-steel ball-joints; a sub-target holder, which is released electro-magnetically by the trigger when the gun is fired, driving the sub-target against the scoring-needle, thus giving an absolute record of the aim or hold of the gun; a gun-holder proper, so designed and constructed that it is absolutely impossible to secure a point of rest with which to steady the gun when aiming, the complete holder so counterbalanced that only the weight of the firearm is supported by the marksman. The entire apparatus is scientifically correct and absolutely accurate. The machine may be quickly changed from the standing to either kneeling or prone position, as may be desired by the marksman.

These machines are in daily use at United States army posts and in State guard armories, where they are proving invaluable in the training of recruits and, incidentally, the affording of otherwise unobtainable practice for qualified marksmen, and have already raised the standard of marksmanship in the United States and other countries, wherever used.

In one instance thirty men who had never had any rifle practice were selected and divided into three teams of ten men each. The

first team was put on an outdoor range with service rifles and ammunition; the second on a miniature range with miniature ammunition, and the third in the armory with the sub-target gun machine. After several weeks' practice, as above, the three teams were pitted against each other on an outdoor range, and the sub-target gun team, the members of which had had no practice with loaded rifles, defeated



SUB-TARGET MACHINE.

both the other teams. This was a natural consequence, because with this machine the recruit becomes thoroughly familiar with the holding, sighting, and firing of the rifle before he can acquire the gun-shyness usually accompanying the use of loaded firearms by beginners.

Referring to the use of the sub-target gun machine, the inspector of small arms practice of the Seventy-First Regiment, N. G., N. Y., writes: "By personal observation and instruction I practised and qualified nearly 650 men. The result of that indoor practice demonstrated itself when the regiment was ordered down to Creedmoor for actual work. We qualified as marksmen 538 men out of a total of 539 turnout. The elimination of ammunition for this past winter has been a saving of several hundred dollars, which was principally brought about through the use of the sub-target gun machine."

At the International Rifle Meeting recently held at Bisley, England, the machine attracted great attention and was daily used by members of the American team, which won and brought back to the United States the Palma trophy.

At this time, when every military power finds itself with very powerful rifles, but with a very small percentage of men who can effectually use them, the advent of these machines is very timely, as by their use any number of men may be rapidly qualified as marksmen.

FRENCH AND ENGLISH MILITIA IN CANADA.

(Translated from La Revue d' Infanterie, by Sergeant Kieffer, U. S. A.)

III.

ACTUAL ORGANIZATION OF THE MILITARY FORCES.

THE military system organized in Canada to insure in absence of a regular army, the defense of the territory is rational enough at first sight. It admits of a volunteer militia, the nucleus of which is formed from a small, permanent body, intended to supply the militia with instructors.

The establishment of a permanent militia force is not confined to Canada. It is a characteristic of English colonies. You will find the same in Australia, Africa, and New Zealand.

In return, nothing like it can be found in any other militia country. Switzerland, where military service is compulsory, has only a few permanent organizations; in the United States the regular army and the National Guard are two distinct bodies, independent of each other.

PERMANENT MILITIA.

It is since the withdrawal of the English line troops that Canada thought seriously about organizing some permanent regiments. In October, 1871, two batteries of artillery were formed. The principal reason for choosing this branch of the service was the necessity of having proper men to take care of the forts and the military material.

It is unnecessary to enter into any discussion on this point. Experience and common sense convince us that so long as certain nations will maintain standing armies the other countries must, under penalty of seeing their defensive system doomed, make special disposition of their artillery. Barring Switzerland, having an organization of its own, and the United States, which have considerable of a regular army, we find everywhere permanent artillerymen.

For twelve years, from 1871 to 1883, the two batteries at Quebec and Kingston were the only troops constantly kept in the service.

They were really schools of instruction for the officers and non-commissioned officers of the artillery belonging to the ordinary militia.

Schools for other arms of the service were established from 1883 to 1887. The permanent forces amount at present to 865 men and 203 horses, and are distributed among the different branches as follows: Two squadrons of Royal Canadian Dragoons; two batteries of field and two batteries of heavy Royal Canadian Artillery, and four companies of Royal Canadian Infantry.

It has always been difficult to define satisfactorily the status of these permanent troops, which are practically neither regulars nor militia.

These three branches are recruited by voluntary enlistments for three years. The applicant must be over eighteen and less than forty-five years old. With a view to lessen the actual epidemic of desertions among these "permanents," they are allowed to purchase their discharge during the first three months of service on payment of thirty dollars, and after that time by paying two dollars for each month they have still to serve to the end of their enlistment. This privilege stands good in time of peace only.

The pay varies from forty cents daily (private soldier), to sixty cents (artificer of artillery); corporals receive seventy cents; the other non-commissioned officers from eighty cents to one dollar per day. To this must be added the increase of pay: First. For good conduct, from 2 to 4 cents daily. Second. For re-enlisting, from 5 to 7 cents, according to the arm of service.

The officers receive from two dollars (Lieutenants) to $3.75 per day (Major). The increase of pay: For Lieutenants after four years' service, 50 cents daily; after eight years, $1.75.

Enlisted men draw, free of cost, their clothing and equipment. The following is the allowance of their daily ration: 1 pd. bread, 1 pd. meat, 1 pd. potatoes, 2 ozs. cheese, 1 oz. barley, ⅓ oz. coffee, ½ oz. tea. 2 ozs. sugar, ½ oz. salt, 1-36 oz. pepper.

Life in a Canadian garrison is about the same as in England. Discipline appears, however, to be more slack, and less formality is shown in a Canadian than in an English regiment. Perhaps this is caused by the fact that the permanents come continually in contact with the ordinary militia, or perhaps it is deemed necessary to overlook, in view of the many desertions, certain transgressions. It is certainly a fact that drunkenness is rarely restrained among the colonial troops, especially among the non-commissioned officers, who are hardly ever punished. The officers, as far as indoor discipline is concerned, depend principally on the Sergeant-Major, the almighty Adjutant. The general conduct of the "Depot" depends most always on the character and the tact of this man.

The non-coms. have, as a rule, a room to themselves. Their messes are well organized and considerably frequented by their "*citizen friends*," which, considering that guard duty is very easy, makes the position of the Canadian Sergeant very pleasant. It is, naturally, the ambition of every young non-commissioned officer to be sent to England for a course of instruction, in order to have on his return a particular standing with his comrades. * * *

GENERAL ORGANIZATION OF THE MILITIA.

As we have stated before, the Militia Act of 1868 made the militia—until that time provincial—national. In this it differs considerably from that of the United States, the practical distinction being that

in time of war it is not necessary in Canada to transfer the troops of the different provinces to the federal service before using them in any part of the territory. * * *

The active militia includes all volunteer organizations. The inactive (sedentaire), is composed of the remainder of the male population in accordance with the above cited Militia Act. The cost of maintaining the militia amounts at present to about $1,366,200 annually.

* * * * * * * * * * *

Concerning the territory, Canada is divided into twelve military districts. Ordinarily the commander of a district is an officer of the "Permanents," and has generally near him a superintendent of magazines and arsenals, who is most always an honorary or retired officer—and a paymaster.

The most important districts are those of Montreal and Toronto. The last named includes some of the best regiments of the colonial militia, about 6,500 men.

The strength of the Canadian militia is subject to variations like that of all volunteer armies. One of the latest counts brought out the following figures:

Engineers.—2 companies, 151 men.

Cavalry.—8 regiments and 5 independent companies; 37 squadrons, 4,158 men.

Artillery.—6 foot regiments, 5 independent foot batteries and 17 batteries of field artillery; 31 batteries, 4,112 men.

Infantry.—90 battalions and 8 independent companies, 28,516 men.

Hospital Corps.—1 section, 64 men.

* * * * * * * * * * *

To sum up, the reserve or inactive militia is formed of all Canadians of the required age and able to carry arms and who are not serving in the active militia or enlisted in the "Permanents." This part of the Canadian forces is not organized. It may be said that it has no relation to any "reserve" in the technical sense of the word. At the same time it is not altogether undrilled as there are constantly from 36,000 to 37,000 men who, after having served their three years in the active militia re-enter the inactive ranks.

* * * * * * * * * * *

In all countries not provided with standing armies the mobilization of troops is always a grave question, caused as much by the general confusion of the citizen-soldiers as in consequence of the moral perturbation it creates throughout the country. * * *

In case of war, the militia troops are obliged to serve one year without interruption, which period may be extended in case of extreme necessity to six months longer. The law makes no distinction between serving in the interior of Canada or on an expedition to any other country. It is generally conceded that the Crown can demand troops from the colony for service in any war not endangering the Dominion.

Canada has but one neighbor; this one is naturally the hereditary enemy—at least such is the theory. From a defensive point of view, no danger is expected from any other quarter than from the American frontiers. * * *

No doubt the descendants of the soldiers of Montcalm would hesitate to exchange shots with their brothers of France, and, in case of war with that nation, would most likely preserve absolute neutrality, but it will not be so in case of a war with America. The French-Canadian battalions would march with a will to meet their old adversaries of Chateauguay. The idea has always been entertained in Canada that the United States have their eyes on the colony; it is believed by everybody that the war of 1812–1814 was not solely made in response to the impertinences of England, but with the object of taking possession of the Dominion. In fact, the conduct of the United States regarding Canada explains itself. It was so arranged that, in case of a conflict with the British Empire, the Americans were to invade their possessions on the continent. The same thing will happen in the future if the circumstances of 1776 and 1812 were reproduced. Only at a recent time, owing to the difficulties arising between the cabinets of Washington and St. James, on account of Venezuela, the United States had prepared a plan—this is a fact little known—to throw three columns into Canada. One was intended to seize the canals giving access to the St. Lawrence; the other to cut off the railroads running into the State of Maine; the last to the west to make a movement toward Medicine Hat to render immovable the militia of that part of the country.

The great deeds of Salaberry and his soldiers against the piteous expedition of Hampton make many Canadian officers believe to-day that an American invasion could be easily repulsed with 5,000 men. In well-informed military circles it is however estimated that at least 30,000 soldiers are necessary to guard the frontiers of the Niagara and 200,000 altogether to check the advance of the different columns of the enemy.

Let us add that certain writers, comparing the forces of the two countries, are wont to consider those of the United States as "nègligeables," or at least little to be feared by the Canadian militia.

CONCLUSIONS.

The general impression gained by the study of the military organization of Canada is that in this country, more than anywhere else, you will find yourself in conflict with politics and militarism—if militarism in the true sense of the word signifies—material necessities of the national defense.

The first duty of a statesman, according to a member of the Canadian Parliament, is to consider by what means can be obtained the maximum of military efficacity with a minimum of expense, one and the other being regulated by existing conditions and the resources of the country.

It does not appear that in this respect the different personalities who have in hand the destinies of Canada have done their duty or have had a correct idea of the task imposed upon them.

The Dominion is not, as everybody knows, a rich country. It is an immense country, thinly settled, presenting natural frontiers of over 3,000 miles, vulnerable all along the line. In any case the entire population is indisputably animated with a certain martial instinct—Blood will tell—we have the proof in the fact that its militia has passed victoriously through trials, leaving that of many nations in the dark.

It is right to demand greater sacrifices, in time as well as in

money, than those accomplished so far. The proportion of taxes levied, in the colony, for military expenses is 5.8%. It is in the United States 14%; in England 23.6%; in Switzerland 50%. In the last-named country, which is not rich, this part of the tax represents 7.85 frs. per head; in Canada 1.51 fr.

The evil that ruins the militia of the colony is insufficiency of funds for military purposes. It is there where the true cause lies of the ridiculous short periods for drills; no target practise; insufficiency of equipments; difficulties of the remount, and indifferent kinds of instructors. Matters have gone so far in this respect that, in certain localities, private parties come to the pecuniary aid of the organizations.

Another factor against which the Canadian army has had to struggle for a long time and has caused to retard its progress and makes itself felt from time to time is the indifference of the civilian and political element. It is there you will notice the difference between a nation of warlike sentiments and a country with military *esprit*. In Canada they would, as a rule, rather fire the first shot than to open their purse to help toward the support of the militia. The patron who, in case of need, would not hesitate to take the rifle, and expose himself to all the dangers and fatigues of a campaign, hesitates to give his employee permission to go in the field for drill twelve days in the year. If the encampment should be extended a few days longer, the National Guardsman is liable to find out on his return his place filled by someone else.

The politicians, on the other hand, fail to see the necessity of spending so much money for institutions of no benefit to their party and without any gains in return.

Let us go a little further and try to disclose the most apparent defects of the military system in Canada.

I. The small pay, the overwork, the failure of a pension after long service, causes discouragement to all soldiers of the permanent organizations. Naturally out of 792 men there are on an average 66 discharged by purchase, 80 regularly discharged, 161 desertions, and 94 losses through other causes.

II. The annual period of drill for rural troops is limited to 12 days, from which must be deducted the trips for concentration and dislocation (very often increased through improvidence of the administration). The mistake is also made to try and pass the men, in one week, from the school of the soldier to that of the brigade.

III. There are not sufficient means to develop rivalry between the different commanders of companies. There are no funds to make some sort of compensation to soldiers or non-commissioned officers re-enlisting.

IV. Non-commissioned officers are often appointed without having given the least proof of their fitness for the position.

V. The course at the school of instruction takes place at such a time when the students at the universities cannot take part in it; consequently the militia is deprived of the services of young men susceptible of furnishing intelligent and zealous material.

VI. The commandants of these schools are overburdened with work as inspector-generals and commanders of districts, even at the time when the establishments under their care are open for instruction. On the other hand, the schools for infantry instruction have somewhat deviated from the routine of their line of conduct. The attempt is made more and more to consider the permanents (regular),

who form the staff material, like ordinary troops, instead of instructors—their original appointment.

VII. We have said that the results of the military colleges are partially paralyzed through the influence of politics and the good will of the Government; that the best elements of this school are drained by England. You will see to-day the phenomenon that permanent (regular) officers, appointed from civil life, find themselves instructors of officers of the active militia, graduated from the military college. Finally, the course at the Staff College at Kingston seems to benefit the permanent officers only; those of the active militia do not figure there so to say.

VIII. We have stated in the preceding chapter the desiderata of the commissioned officers; the disparity in their work; the expenses they are subjected to and the advantages obtained by the military laws.

IX. The difficulty for the Canadian officer—not regular—when they attain high military commands in the colony, is a source of considerable discontent and discouragement.

X. Besides the friction between the Minister of the Militia and the Commanding General, provoked by the politicians, make, very often the task of commander of troops very hard and have made often impossible to hold his position.

XI. The actual system of the volunteer militia, the merits of which are developed in time of peace under all sorts of influences, render any inhabitation extremely difficult and laborious.

XII. The inhabitation is also embarrassed, as we have remarked before, through the absence of horse artillery, insufficiency of cavalry, the meagre state of the accessory and sanitary services. Let us add that the strength of the infantry restrained as it is, finds itself still more reduced by the necessity of forming sections of pioneers, litter-bearers and cannoneers for the Maxim guns of the battalions. While some captains are more fortunate than others in the stength of their companies, the recruiting has in many sections reached the possible maximum. There seems to be nothing else to do in this connection but to encourage re-enlistments.

XIII. The material situation of the rural infantry regiments, making it difficult to keep the arms in good condition, is given as a reason for these troops to retain the Snider rifle. Concerning the firing at target practise, it has, we know, a tendency to degenerate into an occasion of sport, cups, championship without much benefit to the general instruction of the militiamen.

XIV. The dividing of the battalions into rural and city companies cripples the uniformity of the brigade. The rural companies have considerable more cohesion among themselves than with the city troops, who show up only accidentally in the camps.

XV. The instruction of the foot artillery is not carried on in a practical way. No attention is paid to siege or heavy ordnance. To put, for instance, on the same footing the batteries of two places so different as Montreal and Halifax is, to say the least, strange.

XVI. The instruction of the cavalry needs improvement. The fact alone that the same number of days for exercise are demanded for cavalry, the same as for infantry, shows plainly the extent of military knowledge of the Canadian legislators. It is still undecided whether to adopt the regular tactics of the cavalry or mounted infantry. In the meantime, the regiments receive a vague idea of the two services. The result may be easily imagined.

XVII. The engineer corps is in a state of embryo, The too small companies have been raised, besides, as far away as possible from the important strategical centers of Canada. Always the stumbling-block of the volunteer formations. They grow at random, something like the foolish plants, the seed of which had been accidently thrown to the winds.

XVIII. It is on account of these unaccountable whims that we must possess in Canada, on the Great Lakes, a good proportion of field artillery; also several batteries of coast artillery and naval militia would especially be very useful.

XIX. Insufficiency of funds interferes with the supply of provisions in the storehouses, and those are not distributed according to the needs of the mobilization..

XX. The instruction of the hospital corps is not carried out with the care it deserves.

The essential remedy for all these evils would be the creation of a General Staff, able to give to these scattered organizations composing the Canadian army the cohesion, impulse and confidence now lacking; a general staff strong enough to obtain from the Parliament the credit of which it does not understand or at least feigns not to understand the necessity for; powerful and independent enough to triumph over the eternal enemy of the military institutions of all times and of all countries—the politician.

In closing this discussion of the military system, permit us to remark that our aim, especially in this last chapter, has not been solely to draw attention to the defects of which the militia, little known by any foreign nation, is suffering. It is hardly necessary to say that these difficulties are not in the main, in spite of appearances, peculiar to Canada, but are liable to present themselves with more or less intensity, under all sorts of forms, in the midst of any country not having a standing army. It is for this reason principally that we respectfully recommend to our readers the study of this article.

ZEBRA-HORSE HYBRIDS.

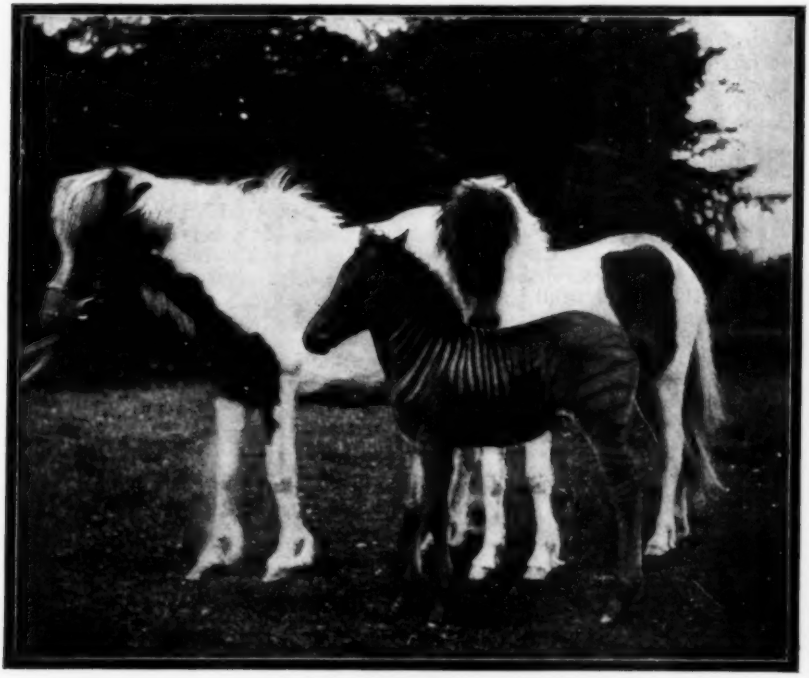
(*The Scientific American.*)

THE recent purchase by the Indian Government of two zebra-horse hybrids from Prof. J. Cossar Ewart, of Edinburgh University, Scotland, has called attention to the work of this gentleman, and, incidentally, to the experiments in cross-breeding of Mr. Carl Hagenbeck, the animal dealer at Hamburg, who has for some seven years past given serious consideration to this subject. During this comparatively short period Mr. Hagenbeck has produced an entirely new variety of sheep, deer and pheasant by crossing the stronger, wilder species with tame, domestic specimens.

It should be stated at once, perhaps, that the one aim in conducting these experiments has been to obtain a stronger and better animal—that is to say, better blood. That this has been accomplished in the case of the zebra-horse cross there is not the slightest doubt. The new animal, which has been named the zebrule, has been produced with the object of taking up the work of the ordinary military mule. It is a little larger than the average mule, and when once broken to harness is much more tractable and far more intelli-

gent. Furthermore, the new animal does not possess that stubborn will and dangerous tricks often found in the common mule. It is also hardy, a good trotter, very sure of its footing, and capable of adapting itself to great changes of climate and temperature.

Professor Ewart seriously commenced his experiments nine years ago. He obtained a fine, healthy zebra stallion, "Matopo," now the sire of many zebrules. The first hybrid was born in August, 1896, at Penicuik, in Midlothian, Scotland, the dam being a pony selected from a first-class breed, the sire, of course, being "Matopo." The foal proved strong and hardy, very easily broken to saddle and harness, while its intelligence surprised those in charge of it. The



THE ZEBRA-HORSE HYBRID

animal was produced merely for scientific purposes, but it was such a success that Professor Ewart came to the conclusion that the new hybrid would be an ideal animal for ordnance and commissariat work.

The experiments were therefore continued, and a number of zebrules bred from thoroughbreds, half-Arabs and Clydesdales. Several of these were purchased by Carl Hagenbeck, of Hamburg. Indeed, he had already bought the two which have been despatched to India, but willingly gave them up to the Indian Government when

they decided to take them, as he is convinced from his experience and handling of the zebrule that it will be the mule of the twentieth century. He is endeavoring to get the German Government to take some of these animals for use in their army. He has several in his park at Stellingen, near Hamburg, and when in that city recently the writer went for a drive behind two of these interesting creatures.

Full-grown they stand about 14 hands high, and have a girth measurement of about 63 inches. They are therefore somewhat larger than a mule. At first sight they strike one as strange, the zebra striping in some instances being very distinct, though, of course, by no means so conspicuous as in the wild zebra. They answer to the reins instantly, are not at all nervous of electric cars or traffic, and fast trotters.

Professor Ewart, in speaking of the hybrid in his book, "A Guide to Zebra Hybrids,' 'says: "Zebrules are usually better able to take care of themselves than pure-bred animals, are more alert, more active, and altogether more vigorous and intelligent. From the first, zebra hybrids are more friendly, more curious and confiding than ordinary foals. With time and care most of them can be trained to any kind of work. It is almost impossible and far from safe to break in a young mule by itself, but quite possible to break in by itself a zebra hybrid."

It was hoped that the British War Office would take the new animal, but it stolidly refused to touch them. It is as well, perhaps, that the animals are to be tried first in India, where it is well known the natives manage their mules with more tact and patience than the British soldier. The animals have already arrived at their destination, Quetta, and are now undergoing a series of tests as to their suitability for mountain battery work. Although no official report has been received, it has been stated that the animals fulfil all the requirements set down by the Indian Government. Indeed, so well have they behaved that a number of drives have been organized in the East Africa Protectorate for the capture of young zebra stallions for exportation to India, Jamaica, and elsewhere for breeding purposes.

Reviews and Exchanges.

Phœnixiana.*

JUDGING from our own experience it was high time for a republication of this book. Some years ago in one of our reminiscent moods that increase with the years we bethought ourselves of a couple of volumes pleasantly remembered through half a century—"Sketches and Burlesques" by John Phœnix, and a little work known to our cadet days as "Mahan's Outpost Duty," and recollected as far more epigrammatic than text books generally.

Possessing, we are sorry to say, a very promiscuous acquaintance with old book stores, we zealously started out to pick up copies. In the matter of Mahan we failed utterly, having in view an edition not later than the early fifties, and the best we could discover of "Phœnixiana" after a long and dusty quest was a thirteenth edition of 1889. With that we had to be content, despite the imperfect printing from well-worn type with its ragged results so irksome to the bibliophile fond of clear-cut letters and spaced lines How the leaves as we turned them over carried us back to San Diego—old town—and the California Coast Range—to the sanctum of the San Diego *Herald*, the principal article of furniture of which was a keg of sherry, lightened somewhat of its contents by our visit and the pressing hospitality of its genial owner, Editor Ames, the "Judge," whose untimely return from San Francisco led to that "misunderstanding" with his two week's substitute, John Phœnix himself, as set forth in the book.

"We," so says the gallant John, "held the Judge down over the press by our nose which we had inserted between his teeth for that purpose," but it is true that at the time of our interview the Judge showed no sign of the struggle. Possibly he had changed his shirt, the one, it will be remembered, upon the back of which a fair copy of the advertisements of the second page of the *Herald* had been struck off during his temporary use of the press as a lounge.

It might have been the very number that contained those famous illustrations of "Abbotsford, residence of Sir Walter Scott, author of Byron's Pilgrim's Progress;" of "A fearful accident on the Camden and Amboy R.R." and of the "Bank account of J. Phœnix," so very. very like our own.

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* *Phœnixiana*, by J. Phœnix. A new edition. New York, D. Appleton & Co., 1903.

From Original in Military Service Institution and by permission Century Magazine.

CAPTAIN GEORGE H. DERBY, CORPS TOPOGRAPHICAL ENGINEERS.

Here, too, is that Scientific Corps organized so largely out of the Phœnix family and containing "Lieut. Minus Root, of the Apocryphal Engineers," together with the transit and azimuth instruments "permanently set up in a mule cart and backed into the plane of the true horizon when required for use."

Then comes the worthy Chaplain, who, being driven to the Mission as Jehu drove, asks between gasps of the "whip," "Do you know why you are like a Pharisee?"

"No."

"Because you appear unto men too fast."

This same conundrum emerges in Grant Duff's recent "Diaries." "Why are the girls of the period like the Pharisee?" "Because they disfigure their countenances that they may appear unto men to fast."

But Phœnix has the prior claim and better version.

Here is the original of that celebrated dinner where the host asks his unexpected guest if he is fond of boiled rice. "Well, no, I can't say I am."

"Ah, then just help yourself to the mustard." The only other dish on the table, a combination not even yet unknown to the occasional resources of some frontier family commissariat.

But even this limited menu might come within Curran's idea of a dinner, "two dishes and five o'clock," if not quite equal to Grattan's "a crust—and claret," or however inferior to the champagne and cutlets that formed the least of the lunches of the last Louis.

It will not do to forget the note of the foreign countess to her friend, the new collector, credited by Phœnix to that functionary's waste-basket, "Sir, Mr. Jose Jones, he say he wish to be clerk, you much me oblige by make him do it."

And the volume winds up with a letter to "My Dear Charles," the persuasive "General agent, etc.," who kindly informs Lieut. Derby that he will be satisfied with a mere trifle—say ten per cent., for his trouble in putting through Congress certain supposed claims for back pay. The Lieutenant in reply "will see him——first," and generously allows the gentleman to fill up the blank with any kind aspirations for his future welfare that may occur to him.

Nevertheless, the "General Agent" and his posterity are still to the fore and daily burden our mail with their importunities. What will they be if Congress commits the folly of further reduction of postage dues.

The volume treating of America in the "National Humor Series" extracted from Phœnixiana "a new system of English Grammar where the inaccuracies of expression that belong to ordinary intercourse are replaced by arithmetical symbols in the interest of precise and exact statement enabling us to assure friendly enquirers not that we are feeling poorly to-day, which is culpably indefinite, but that at the present moment we rate thirteen to a maximum of one hundred. And we think *American Humor* would have been better represented by still more of Phœnix.

As entertaining and suggestive a procedure of Lieutenant Derby as any we know is not chronicled in his book, but will be found in the "Reminiscences of Ben Perley Poore," where it is stated that when Jefferson Davis was Secretary of War he, too, took a hand in the uniform question which still continues to perplex the ministerial mind to the delight of the tailors and the despair of army ladies whose mission it is to make a sixpence do a shilling's duty.

To see an opportunity with Lieutenant Derby was to use it, so he at once communicated with the Secretary, doubtless by the "proper channels," suggesting that among the changes there be taken into consideration the great advantages connected with a stout iron hook to project from a round plate securely fastened to the seat of each pair of trousers.

Then followed a page or so of diagrams illustrating the uses of the arrangement in barracks, in camp, in the field and in battle, for all arms of service, and in fact very nearly all the contingencies that arise in the soldier's life, both culinary and combative.

It is said that it took the sense of humor of a united Cabinet to save the Lieutenant from a court-martial "organized to convict."

Army camp fires and mess rooms, although furnishing more good stories than most other localities get but scant credit. The best of fun is there, but has no Boswell.

"Phœnixiana" is a happy sample of what might be done—might have been done, we should say,for in these strenuous days it is the man who does things rather than he who says them that seems to be in demand.

The present ideal is more like a bull in a china shop than a scribe at his desk.

However, any one fortunate enough to encounter this new edition of an old classic in the realms of becoming mirth need have no compunctions about wasting time or money if he buys and reads in spite of the fact that there have been professors who would thrust "Paradise Lost" aside, "because it proves nothing." Another member of this sect could only say of Walter Scott's novels that "they have in no respect tended to improve the moral conditions of mankind." There are laughs and sermons and there was a man who was offered port and sherry. He said he would take both, and he was wise. We rejoice that the world is big enough to hold John Phoenix as well as Plato, and we deeply sympathize with Joaquin Miller, of whom it is written that some ascetic once asked him what he was reading.

"Bret Harte."

"How can you weary your immortal soul with such trash?"

"Are you sure that my soul is immortal?"

"Certainly I am."

"Then, I don't see why I should be so very economical of my time."

The preacher may cry "He that increaseth knowledge increaseth sorrow," and the pessimist follow with his satiric snarl, "Vanity of vanities all is vanity," but we prefer the simple, unsophisticated faith of the boy whose mother had just told him that God sees everything. He was silent for a time, and then began:

"Can God see me now?"

"Yes, my son."

"Can he see my slate?"

"Yes, my son."

"Well, I bet you He is laughing at this horse I've drawn!"

This book reminds me of the bird from which comes the name, who, so fables say, was wont to rise from its own ashes in renewed splendor and glory. Binding, illustrations and preface harmonize with the old context like peaches and cream or hyomel and honey.

H. W. C.

Gordon's Civil War Reminiscences.*

IT is impossible to agree with those who most admire General Gordon's book when they declare that it will be or could be considered a book which, on the Southern side, will take the same place as does General Grant's narrative on the side of the North.

While it is strictly a narrative, this book will be valuable as a book of reference, but we must recall that General Grant wrote an historical work, a modest statement of what he, Grant, did; while General Gordon seems to dwell often on what might have been had his advice been followed. Notice his article on Gettysburg, The Wilderness, and Cedar Creek.

Insert 6 point.

Old officers of both sides feel that they know the story of the war of 1861-1865, and each one knows it from the standpoint he was educated to regard as the only true standpoint. It will be impossible to change this for generations to come.

So General Gordon has written his experiences of the Civil War, and he has produced a book which will be considered an interesting story of the part he took in many of the battles of that long, distressing strife between Unionists and Disunionists. It will please the old soldiers of the South particularly, because the General's style is particularly Southern, and his confidence in himself and devotion to his cause is strongly characteristic of those who were educated in the South.

Well may General Gordon speak of the heroism of both sides, since it is difficult to find the time when there was any other than a determined wish to meet and try again after any of the hard struggles from the first Manasses to Appomattox. So far as the Army of the Potomac and the Army of Northern Virginia were concerned, this was their normal condition.

When one writes his reminiscences, it is well to avoid giving hearsay evidence. Hardly any of our reminiscences of the Civil War would, at this late period, make a readable book; therefore we are forced to pad our work—pad it sometimes much more than is prudent. We may even romance a little. When General Gordon departs from his original plan, as expressed in his Introduction, *i e.* "to make a brief but dispassionate and judicially fair *analysis* of the divergent opinions and ceaseless controversies which, for half a century, produce an ever-widening alienation between the sections, etc., etc.," he gives us at times real reminiscences which are interesting, and vivid and historical, and, in fact, well worth reading.

The book loses as the author endeavors to explain and instruct, yet to give this instruction was his declared object.

When, on page 18, it is stated "There is no book in existence, I believe, in which the ordinary reader can find an analysis of the issues between the two sections, which fairly represents both the North and the South, . . . it will be my purpose to state the cases of the two sections so impartially that just-minded people on both sides will admit the statement to be judicially fair," the author undertakes a task—the satisfactory completion of a task—which he naively states no other man had satisfactorily accomplished. And yet there have been greater men who imagined that they could comprehend the question.

* *Reminiscences of the Civil War.* By Gen. J. B. Gordon. C. Scribner's Sons. N. Y., 1903.

When he carefully reminisces, he writes a readable and interesting story, giving large and valuable experiences of historical value, useful alike to Southern writers who may be induced, after reading General Gordon's work, to record the parts they took in the Civil War, and attractive to Northern writers who, in the distant future, may hope to write impartially, even though they may fail also in explaining all the causes of the differences between the North and the South.

It may be that "Causes of the Civil War" is a subject upon which neither side can yet write with perfect freedom.

The chapter on the Wilderness is probably, in the opinion of General Gordon, the best of the series. It describes how the Army of the Potomac would have been outflanked, rolled up from right to left—"Sedgwick's Corps to be destroyed first," "the fate of the next Union corps (Warren's) surely sealed" . . . "and so of the next corps and the next." "The vast results which must have attended its execution could scarcely be doubted by any experienced soldier."

The author says, "I formed and submitted the plan which, if promptly adopted and vigorously followed, I then believed and still believe would have resulted in the crushing defeat of Grant's Army."

But—first it was not done, because General R. E. Lee did not approve of it. Second, it could not succeed because the Army of the Potomac was accustomed to all of these devices and artifices, and always took care of itself in spite of its commanders.

Yes! General Gordon forgot that he was speaking of the Army of the Potomac, and he forgot that General Grant was just learning to have confidence in General Meade's dispositions. It was impossible to carry out General Gordon's flanking maneuvers unless you left out the men of the Army of the Potomac, who never lost a gun or a color, and never retreated until ordered to do so, and there were many such lying around in the woods of the Wilderness.

Someone might devote a few hours to searching for the designation of the brigades which were routed by Gordon's single regiment (page 239). Many of us who "held our own" would be pleased to record in any future writings on the subject of "The Wilderness in 1864," just how the two portions of Gordon's command, which swept us from the field (on page 241) were stopped in their mad career. Had Warren lived to this date he would have felt it to be his duty to give to his gallant and enterprising adversary full credit for this "unprecedented movement" which "checked any further effort by General Grant on that portion of the field."

Possibly General Grant was too busy preparing to move to his left to notice this disturbance of his plans.

General Gordon's description of the taking of the angle at Spottsylvania by the Second Corps of the Army of the Potomac is graphic, and is a valuable addition to our military archives. He was a hard-fighting, aggressive commander, and he assisted in recovering some of the lost works.

He seems to be impressed by General Lee's forethought after May 5-9, 1864, but how could General Lee be blind to the certainty that he would have to meet our army at or near Spottsylvania? He saw that the mishaps to the flank of the Sixth Corps had no effect upon Grant or the Army, and that he could do nothing but move to meet us again on our road to Richmond.

In quoting all that General Porter writes about the mad galloping of aides and orderlies on May 5th and 6th at and near Grant's

headquarters, General Gordon ought to remember that this is apt to be the case during heavy battles, and is only wildly distressing to those in the rear. Those in front who, as detachments, fought for long hours against larger numbers, did not have the slightest anxiety about the extreme right. We knew that the matter would be adjusted with the usual resort to prompt support and relief, as it was at Chancellorsville.

We must conclude that General Lee knew more about the Army of the Potomac than did the enthusiast, General Gordon.

When we place a book of reminiscences on our shelves, we value it for future reference just so far as it relates to the personal experiences of the author.

General Gordon's experiences from the day he took command of his company, "The Raccoon Roughs," to the date of Lee's surrender at Appomattox were as follows:

Major at the First Battle of Bull Run; Colonel commanding a brigade at Seven Pines and at Malvern Hill; Brigadier-General commanding a brigade at Antietam; wounded five times, he was absent from the army until Chancellorsville; then at Gettysburg, the Wilderness, Spottsylvania, etc., to Appomattox, serving in the meanwhile at Winchester and Cedar Creek.

There is much in the book relating to history outside of these experiences which General Gordon might well have reserved for his history of the War of the Rebellion.

The chapter on Hunter's Raid is not in accord with the tone of the book. The personal dislike to General Sheridan may well be excused.

It is well to get together with these reminiscences as a center of information. We could supply much to correct the misapprehension in regard to relative strengths, also supply the numbers engaged in captures of guns and prisoners following some of the repulses. Now that we have official records to appeal to, it is well to collect these facts and to furnish them with each narrative. It is only by doing this that we will obliterate the old misstatements of the early official and newspaper accounts of results of engagements. General Gordon's book may serve to call attention to some of these errors.

Gordon has given us a readable book, an attractive book, a book with a charming tone of appreciation for gallantry shown by either side.

We enjoy his anecdotes and his descriptions of the generals of the Confederacy, with whom he agreed, but one wonders how he could write some of his chapters and leave out the names of men better known to us who had prominent commands than was Gordon himself.

General Lee's friends will settle with General Gordon why Lee lost Gettysburg and the Wilderness, etc., in spite of Gordon's advice. Gordon's claim satisfies Gordon—that's enough.

"OLD SECOND CORPS."

Talks of Napoleon at St. Helena.*

THE private journal of General Gourgaud, whom Napoleon designated "My first orderly officer, he is my work, he is my son," who participated in all of Napoleon's campaigns from 1804 to 1815, and accompanied him to St. Helena, was first published in 1898, in two volumes of 1200 pages, and embraced many matters of which the reader cares little. In the volume before us the translator has extracted from the journal almost all that Napoleon said to Gourgaud in familiar chats about his life and times, and about the great generals of other nations who preceded him. Napoleon himself vouched for the truthfulness and accuracy of the journal. Of course, anything said by this remarkable man concerning men and events, particularly those near to him, are of enduring interest, and especially so to military students.

Regarding the battle of Waterloo, he says, "With twenty thousand men less than I had, we ought to have won the battle of Waterloo, but it was fate that made me lose it." The Emperor then told why he did not understand the battle. He said he did not see as much of the battle as he could have wished. He intended to make, as he had done at Montmirail, a perpendicular attack, and to have led it in person, but the arrival of Bulow forced him to remain in a central position. "They could not understand my plan of attack." "Soult, his second in command, did not aid him as much as he might have done." "More vigor and promptness than Grouchy had as a general were needed." "The men of 1815 were not the same as those of 1792." "My generals were faint-hearted men." "It was the good discipline of the English that saved the day." "Ah! *Mon Dieu!* perhaps the rain on the 17th of June had more to do than people think with the loss of the battle of Waterloo. If I had not been so worn out, I should have been in the saddle all night. What seem small events have often the greatest consequences."

In discussing the great generals of the past, about the only two who escape his censures are Cæsar and Turenne. Of the former he says, "He was a man of great genius, who loved bold enterprises." Of the latter he says, "He was the only general who, as he grew an old man, grew bolder. I approve his operations all the more because I find them exactly what I would have done. If I had a man like Turenne to be my second in command during my campaigns, I should have been now master of the world, but I had nobody."

Where was the "star" that he saw guiding him so vividly in his earlier days? It had sunk out of the heavens and with it all of Napoleon's confidence in himself. He did not even do as Cæsar did when he lost his grip and consult the flight of birds and other omens. The impulse of battle did not come from him. It had been exhausted in the French people; the fires of the Revolution had burned down and out.

The volume is illustrated with portraits of Napoleon and his marshals, is printed in clear, bold type, and is handsomely bound. It is a valuable addition to any library.

J. W. R.

**Talks of Napoleon at St. Helena.* By Elizabeth Wormley Latimer. Chicago, A. C. McClurg & Co., 1903.

A Bird's-eye Glance at China.*

THIS book is most clearly written to give a bird's-eye glance at the geography, history, government and commercial interests of the yellow Empire, and also a description of the civilization, cult and characteristics of the people.

It is fairly ambitious to attempt this in three hundred pages; but the views of the author are concisely and positively expressed, and there is no doubt that he speaks from personal observation and association with the people. The book contains seventeen sketch maps which materially assist in acquiring a fair idea of this great subject.

Notwithstanding the force and directness of the writer, it is apparent that his judgments must be taken with care. He is a little too extreme, as his observation that American children are usually ill-bred, sickly looking creatures, brought up under exaggerated ideas of liberty, naturally warns one. The author says the Chinaman is a liar; but he thinks his lying differs only in kind not in degree, from that of the European. As all his conditions are different from ours, he finds a different motive, and he thinks the Chinaman less hypocritical.

The ancient dynasties are enumerated to a period nearly 3000 B. C. the dynasties with continuous histories begin about 250 B. C. The dynasties formed on the present ruling principles date from the end of the sixth century. The book contains a valuable list of treaties, and tells the story of the crowding of the Tartars and Russians on the North.

The description of the Chinese army or "green banner" fifty years ago is that of "a rabble provided with bags of rice, gay flags, umbrellas, fans, and (quite a secondary matter) rusty guns, gin galls, spears, heavy swords and (very occasionally) fairly good rifles and cartridges of a date always behind the times." Nevertheless the author says, referring to their reliability, that he would not "hesitate to lead a Chinese force properly armed, and brought into shape under my own supervision, against any European troops in existence." For anyone desiring a cursory knowledge of the country, there is no better book in print. C. E. L.

The Earl of Crawford's Ms. Memoirs.

IN the library of the American Philosophical Society in Philadelphia there are four folio MS. volumes, labelled Vol., 1st Account of Some Campaigns of the British Army from 1689 to 1712, and Journal of a Campaign under Prince Eugene on the Upper Rhine, and Miscellaneous Papers.

Vols. 2d and 3d, Journal of a Voyage from the Thames to Russia, and of Campaigning with the Russian Army, 1738–9.

Vol. 4th, Journal of a Campaign with the Russian Army against the Turks, 1737–9.

They are all in admirable condition, in clear handwriting, with many very fine maps, well bound with clasps and lock, and in ex-

*China, Her History, Diplomacy and Commerce, from the Earliest Times to the Present Day. By E. H. Parker, Reader in Chinese, University College, Liverpool, formerly H. M. Consul at Kiungchow. New York, E. P. Dutton & Co.

cellent preservation. How they came to this country nowhere appears, nor is there any evidence of the authorship other than some bills against the Earl of Crawford bound up with other papers. That they are his is clear from a reference to his Life by Richard Rolt, published in London in 1753 and reprinted there in 1769, and to his biography in Lord Lindsay's Lives of the Lindsays, London, 1849. In a note to page 237 of Vol. 2, Lord Lindsay says, "The diary of this journey (*i.e.* from Petersburg to General Munich's headquarters), dictated by Lord Crawford, and corrected by his own hand, a large folio, is now in my possession, with various other journals and military MSS., the bequest of my kind relative, Lady Mary Lindsay Crawford, sister of the late Earl of Crawford of the Byres line."

In the National Dictionary of Biography, Vol. 38, page 305, etc., there is a narrative of the life of this the twentieth Earl of Crawford, born 1702, died 1749, whose MS. memoirs have for many years been carefully preserved in the library in Philadelphia. How these volumes got there, there is no record. Their interest for students of military history is such that they ought, if possible, to be secured for the Library of the U. S. Military Academy at West Point, or for that which will no doubt be added to the new War College in Washington.

The 1st volume contains: 1st. A short treatise of fortifications and geometry, p. 33. 2d. A method of discipline proposed for the behavior of a regiment of foot upon action, p. 29. 3d. An account of the most remarkable transactions which happened in the campaigns I made from the year 1689 to the conclusion of the Peace of Ryswick in 1697. It begins: "The regiment I served in is very well known by the title it bears, of the Royal Regiment of Foot in Ireland, from which regiment I may without vanity say our British Infantry had the groundwork of their present discipline." It describes Schomberg's Irish campaign of 1689, p. 12, then the campaigns of 1692-3, 1694-5-6-7, p. 14; then, 4th The campaigns from 1702 to 1712, p. 63; then, 5th Journal and remarkable observations during three campaigns made by a friend to the trade of war, in three volumes. Vol. 1st, Journal of a campaign made with the Imperial Army under the command of Prince Eugene of Savoy on the Upper Rhine in the year 1735, p. 87. It closes, "I shall conclude this campaign with the inserting a few useful papers I collected during the operations of it and of the following (I dare venture to say) exact plan of the country we marched over." Then follow twelve beautiful maps giving the successive positions of the armies, the last an elephant folio map of the Rhine from Coblenz to Carlsruhe.

5th. "The following march root [sic] ordered by Prince Eugene I insert as a model of a very difficult part of duty in the trade of war," p. 5.

6th. "Un detail exact et bien calculée de ce que contoit par mois en 1681 la plus periparte marine que la France aie ene," p. 8.

7th. "Un Traittes Touchant les Conquetes qu'ou pourroit faire en Amerique sur la Maison de Bourbon au cas que la Guerre devienne generale et qui seuls peuvent retablir l'Equilibre de l'Europe," p. 6.

8th. Tabulated Lists of the French Army in 1735.

9th. Reflexions sur les Evenements de la Moselle (imperfect), p. 2.

10th. Treaty and carbell made and concluded between his Imperial and Catholicy Majesty on the one part, and his most

Christian Majesty on the other, concerning their prisoners of war in their armies on the Rhine, 1735, p. 16.

11th. The troops in the Black Forest, Friburg and Brisac. Specifications of the Imperial Regiments, 1735. A list of the Imperial Regiments both horse and foot, the names of the commissioned officers, commanders and agents, together with the number of men in each complete regiment and the places where they are now (p. 24). [On the fly leaves are: A tailor's bill in German, some heads of letters, etc.]

Vols. 2d and 3d. Journal of a Voyage from the Thames to Russia and of Campaigning with the Russian Army. It begins at Gravesend, April 13, 1738, gives personal expenses, phrases in English, German and Russian, maps, drawings, scenes, camps, etc., and a sermon on Peter the Great. The 1st volume has pp. 287, the 2d, pp. 398, with 18 maps of sieges, operations, defence of Belgrade, etc.—one dedicated to George the Second.

Vol. 4th opens with a tabular list of the Imperial troops in 1737; then follow, in French:

1st. Journal of the Hungarian Campaign of 1737, with general orders, maps, etc.

2d. Relation des Operations de la Campagne de 1738, by Chevalier de Forrestier, Captain of the Regiment of the King, Inf. 7.

3d. In German, A Diary of the Army Under the Duke of Lothringen, 1738-9.

There are bills for expenses incurred by and made out to the Earl of Crawford, and these MS. volumes were no doubt prepared by his secretary, as material for future record of his services, for preservation in the family archives, and for use in securing advancement and employment. The maps were made by Henry Köpp, for whose benefit the Life of Lord Crawford was published after his death. Much of that life is a reprint of parts of the contents of these four MS. volumes, and the few maps in the life are selected from the large number preserved in the MSS. One of the maps is dedicated to General Oglethorpe, another to the Earl of Londoun, both names known to American history. There is a curious plan designated by the Earl of Crawford to show the disposition in which his Lordship conceived the Imperial Army might have been formed on its junction with Count Neuphey's corps, during the night between the 22d and 23d of July, 1739, in which situation it would have been more eligible to have renewed the battle against the Turks on the 23d, than for the Imperialists to retreat, as they did, in the night time of the 22d! In his life it is said that the Earl of Crawford's "greatest amusement in his periods of inactivity was in revising his journals, making observations of what he had seen, and in embellishing the plans of the marches and encampments of which he had been a spectator. He designated and drew plans with such great accuracy that he beautifully represented all the heights and the hollows, every small break, every ditch, hedge, brush or other obstruction which could in the least incommode an army forming in the line of battle in its movements, whereby any person a little acquainted with drawing could easily perceive which of the armies had the advantage of the ground, and which of them had improved it the most for their own security."

As Lord Crawford died in 1749, and his life was published in 1753, it would be interesting to know when and how these MSS. came

to this country and to the Library of the American Philosophical Society, and what is to be their future—West Point or Washington?

J. G. ROSENGARTEN.

Reminiscences of a Waterloo Veteran.*

THE author, a staff officer of Sir William Delancey, Quartermaster-General on the Duke of Wellington, writes in 1877, an account of experiences in June, 1815, at Brussels, Quatre Bras and Waterloo.

Colonel Jackson (the writer) was young, only twenty years of age when at Waterloo, but he saw many affairs of interest in the great battle and seems to have taken notes on the field. Had he not done so, it would not have been possible for him, at the age of eighty-two, to have related some of the non-essential details. These, however, give you confidence in his statements, and although he has made some errors in regard to time, and but few of these, you feel, as you read, that he wishes to tell "facts," as this he claims to be the sole reason for his writing concerning the part he took in this battle.

When he begins with: "In the evening about seven o'clock I got a summons to the Quartermaster-General's office, Sir William Delancey, our chief having received the Duke's orders for collecting the allied army.

"For two or three hours I was engaged with others in writing out orders for the several divisions to march," etc., we have the right to expect much from the recorded observations of an active officer of the General Staff.

One who is familiar with the details of the battle of Waterloo will find some of Colonel Jackson's narrative of importance—all of it of interest; indeed, it should not be neglected by those who are still engaged in the endless discussion of the motives of the great commanders and in the tactical arrangements or movements of some of the allies and subordinates.

No doubt, through some sense of modesty and much unwillingness to exploit his own deeds, the colonel deprives his readers of an account of his own service on the fighting lines, and gives much prominence to the detailing of the experience of an officer of the General Staff working without orders and often in the rear of the armies.

But even this leads him to tell us of much of great interest—*vide*—his meeting with the slowly advancing Prussians—another proof that Gneisenau did not intend to join Wellington in any haste. Also his account of the hiding of the "auxiliaries" batteries, and 10,000 men in the forest to keep out of the battle (page 47). His witnessing the bayoneting of every wounded Frenchman by the Prussians. His experience and observation relating to the stealing of captured guns and carrying off of English horses by the Prussians.

However, Colonel Jackson was in the front and near the British squares, and says "now and then we of the staff had to run in order to get away from the enemy's cavalry," etc., etc., in a chapter of intense interest. Would that he had described the battle as he undoubtedly saw a large portion of it.

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* *Notes and Reminiscences of a Staff Officer.* By Lieut. Col. Basil Jackson. N. Y., E. P. Dutton & Co. 1903.

He adds: "Respecting cavalry attacks against good infantry formed in squares it is admitted by, I may say, all officers of any experience that, until cannon has taken effect so as to produce disorder in a square, they are worse than useless."

Again: "I many times saw the gallant and daring cuirassiers come on with boldness to within twenty or thirty yards of a square," etc. (page 48).

Again we credit the young aide with obtaining a large experience at Waterloo.

His experience in Paris after Waterloo is positively thrilling and well told.

The 118 octavo pages close with a short criticism of the Waterloo campaign. The author says: "I know it is a sort of treason to cast blame on the great Duke, but as was said by Napoleon, '*Qui n'a pas fait des facetes na pas fait la guerre.*'"

Then he criticises—and does it well.

The book is valuable and interesting. Read it.

Colonel Jackson, in his "Notes and Reminiscences," gives a graphic account of his service, under Sir Hudson Lowe, as a member of his suite at St. Helena, and also as commander of a detachment of "Royal Staff Corps," a sergeant and sixteen men.

This portion of the Notes is of interest, but the events of those days have ceased to have any influence among historians. Colonel Jackson confirms the opinion that the less said about the latter days of the life of Napoleon, the better it will be for the reputation of "The Powers."

A. S. W.

A Great Reference Library.

WITH Volume XIV of the "New International Cyclopædia,"* the latest, most comprehensive, and catholic collection of facts for popular or professional use approaches completion. In this JOURNAL (XXXI, 926, XXXII, 296) has already appeared a description of the work, and attention has been called to the satisfactory handling of military subjects. It is of the thorough treatment in the later volumes of this publication of similar topics that we would again speak. We have reason to know that in most cases each military or naval article is from the pen of a specialist—one who is an authority in his branch of the Art or Science of War. In each case he has borne in mind the aim of the work to combine accuracy of statement with clearness of expression, non-technical terms, suited to the comprehension of the average reader, yet containing in condensed form the latest information on the subject. In treating historical matters care has been taken to avoid the errors of early writers or partisan accounts of events—especially with regard to the American Civil War. Many articles are illustrated by cuts inserted in the text or by full-page plates, and are often monographs worthy to serve as handbooks in military schools or colleges maintaining a military department: the articles on "Ordnance," "Military Engineering," "Artillery," "Organization and Tactics," are of this character.

**The New International Cyclopædia* (V-XIV). Dodd, Mead & Co., New York, 1903.

Among the military and naval contributors to the "New International" are:

Hunter, E., Col., Judge Advocate (Military Law, Mutiny).
Jadwin, E., Capt., Corps of Engineers (Military Engineering, Fortification).
Joyes, J. W., Capt., Ordnance Dept. (Ordnance).
Lyon, LeR. S., Capt., Artillery Corps (Artillery, Military Signaling and Telegraphing).
Powell, J. W., Col. of Infantry, retired (Infantry).
Rodenbough, T. F., Col. of Cavalry, B.B.G., retired (Army, U. S., Cavalry, Mounted Infantry, Mexican War, Spanish-American War, Spottsylvania C. H., Siege of Vicksburg, Battle of the Wilderness, Military Posts, and several biographical sketches).
Shipton, J. A., Capt., Artillery Corps (Artillery, Ballistics).
Van Duzer, L. S., Lieut., U. S. N. (Navy).
Wisser, J. P., Major, Artillery Corps (Organization and Tactics, Coast Defense).

In the list of writers on other topics may be noted the many who have won distinction in literature, art, science, education, invention, and not least, as "captains of industry." These are supervised by an editorial triumvirate—Messrs. Gilman, Peck and Colby—whose names guarantee the highest excellence in quality of this unsurpassed work of reference.

The exceptionally handsome dress in which this Cyclopædia is clothed—type, paper, presswork and binding—are creditable both to editors and publishers.

Q. E. D.

The Cadet's Handbook.*

"THE Cadet's Handbook for College Students," by Capt. John A. Lockwood, U. S. Army, is an excellent compendium of the regulations of the Army and other works of reference from which copious extracts have been made, all very useful and giving an insight into the Army system, but necessarily so brief that the book loses the force of giving complete instruction in any particular subject, leaving much to be learned and possibly leaving the student to think that he "knows it all." It serves, however, to direct attention to matters with which he should be familiar and to direct attention to and research of the more complete authorities. It is, perhaps, unfortunate that so many books in this epitome system have recently been published, covering, as it were, too much condensed ground. In Chapter XII. there are some useful instructions for pitching tents, but we must distinctly differ from the author in his advocacy of finding "comfortable camping-grounds in woods or forests, as the trees afford shelter from the sun and wind." No! rather insist, when possible, that camp be made in the open, even though it trench on the drill and parade ground; the shade of the nearby trees will be tempting, but the bright sunlight is needed on the camp. Altogether, it is a work worth perusal by college students who wish to know something of military life without much labor or real study.

J. W. P.

*The Cadet's Handbook, By Capt. J. A. Lockwood, U. S. A. Hudson Kimberly, Kansas City, 1903.

"Notes on Fortification."*

THIS volume, as indicated by its title, is a systematic arrangement of lecture notes on the subject of *Fortification* by the instructor at the Royal Military Academy, Woolwich. It is not, however (as might be supposed), a simple collection of notes, but it is rather a philosophic treatment of the subject in broad outline, without any technical details, its purpose being to impart interest to the initial study of a subject often made uninteresting by these very details.

The general subject is treated under four heads: (1) *Permanent Fortification.* (2) *Sea Power.* (3) *Coast Defense.* (4) *Submarine Mining.*

In the first the history of permanent fortification is indicated in a few graphic sketches, giving the great changes in the methods of fortification and the reason for them, basing the whole on *tactics*, regarding fortification as merely a branch of the more general subject of Tactics.

The second discusses first the three chief elements in Sea Power (geography, warlike inventions and the art of war, or tactics and strategy), and then applies these elements historically to expansion and oceanic power.

The third refers to the fortifications on the coast, and describes briefly modern forts and mountings of various kinds, including fire control and fire direction.

The fourth describes the system of submarine mines in a very general way, including also the attack and defense of mine fields, and the subject of searchlights and fixed lights

A brief chapter on the organization of the Corps of Royal Engineers concludes the volume.

There is appended, however, in a pocket of the cover what is termed a Synoptical Chart of Fortification (on the "Scaife System" of Historical Charts), which is intended to convey at a glance the chief factors in Fortress Warfare since the Invention of Gunpowder, and in Naval Warfare since the Invention of the Mariner's Compass. It is a graphic chart, the various factors being indicated by different colors, and their influence by the area given them or by curves drawn to scale, and constitutes an interesting study, which is brought up to the present day.

The entire work is a most useful book for the student or lecturer, because it treats practically of the *philosophy* of fortification, and therefore prevents either teacher or student from losing himself in the details of his subject and becoming narrow-minded.

It is also bound conveniently with many blank leaves, so that further notes may be added, and is eminently suited for the class-room as well as for general study. J. P. W.

An Apache Princess.†

THIS is by no means the strongest link in the chain of Army fiction that "Charlie" King has forged out of the metal of his frontier experience. The flaws which were noted in earlier publications are conspicuous in this later story of garrison and field.

**Notes on Fortification. With a Synoptical Chart.* By Major B. R. Ward, R. E. [New York, E. P. Dutton & Co., 1902. Pp. 50.

†"*An Apache Princess.*" by General Charles King. The Hobart Co., N. Y., 1903.

One may always be sure of the accuracy of detail in King's pictures of army life on the border as it was in the early '70's, and in many respects as it is to-day. His customs of service and his soldiers are "the real thing"; his subalterns are typical products of West Point, civil life and the ranks, and his Indians are to the manner born.

It is a great satisfaction to the reader to feel that while entertained he is also being instructed in a kind of professional life of which he may have but a vague conception. But if this is true of the masculine and official element, the civilian reader should accept, *cum grano salis*, some of the author's descriptions of the inner life of a garrison. Because there are occasional black sheep in the fold, the proportion should not affect the whiteness of fleece of the rest of the flock. And this is a marked defect in this otherwise true sketch of American army life: the thread of scandal running through the story is kept too constantly in view, and when the tale is told, stands out as a bar sinister across the escutcheon. It leaves a bad taste in the mouth—it is inartistic from a literary point of view, and gives an unfavorable impression of the service. If we may further object, it would be to the frequent digressions from the main theme to minor sayings and doings, interrupting the train of thought, switching it off on a side-track, from which it is brought back with an effort and loss of interest. Nevertheless, "An Apache Princess" will be read with pleasure by many admirers of the gallant author. The publishers have brought out the book with a very attractive cover, good type and several full-page illustrations.

CENSOR.

The Cavalry Horse.

THERE reaches us from the Hudson-Kimberly Publishing Co., Kansas City, Mo., "The Cavalry Horse and His Pack," by First Lieut. James J. Boniface, 4th Cavalry. The book has also a subtitle, "Embracing the Practical Details of Cavalry Service."

This book is so similar to General Carter's book "Horses, Saddles and Bridles" that a comparison is invited to see wherein they differ and if the more recent book has justified its appearance. Both books are well printed and illustrated, but the typographical work in the newer book is not as good as in the older. The man in the picture on page 103 should have been omitted.

Lieutenant Boniface uses something over a hundred pages more than General Carter. Some of the subjects discussed, not in the older book, are a general history of the horse and of cavalry; a short chapter on marches; a chapter on the passage of rivers and a chapter on the pack train. Otherwise this book is about the same as General Carter's and a hasty examination does not reveal any difference of opinion between the two authors.

Several things in the makeup probably escaped the author's notice. No credit is given Mr. Remington for the frontispiece, "United States Cavalry Officer on Campaign." On page 51 he states that "the breeding of horses became quite a business in the Colonies as early as 1640." On the next page he makes the safe statement, "Thus, from these historical proofs of the early horses in America, it can be seen that the horse was bred in this country for over one

hundred years." On page 94 he states: "It will be seen that certain general qualifications are deemed by all cavalry services to be indispensable."

Then he shows that in various services stallions, mares and geldings from 14 1-2 to 17 hands and from three years up are used. General qualifications, certainly.

Nothing new is added to the discussion of bitting and the unsatisfactory cut on page 167 is reproduced from Major Dwyer's book. Figure C, page 167, and the statement on page 172 as to the laws of mechanics, do not agree.

A good picture of the U. S. Cavalry curb bit, model 1892, with its dimensions, is given, but the author fails to state that it is admitted that this bit is wrongly proportioned. It was intended to be General Carter's idea of a bit, but General Carter states plainly in his book that the length of the upper branch should be measured to the point where the curb hook acts, not to the center of the upper ring, as in the 1892 model.

The newer bits issued with a longer upper branch than the 1892 model give better results.

But after all, the horse's early training and the rider's "hands" are the main things.

The writer's chapters on "Marches," "Passage of Rivers" and "The Pack Train" are excellent and of interest to all officers. The lance-boot might well be omitted. Our author wisely puts great stress on the troop commander, riding a horse that walks and trots at the proper rate.

Lieutenant Boniface is to be commended for the work he has given his subject. S.

Our Exchanges.

Military.

Journal Royal United Service Institution.—August.—The French First-Class Battleship *Carnot*. On the Raising and Training of Irregular Mounted Troops. Infantry Equipment. The Comparative Mortality of the French and German Armies, 1888–89 and 1899–1900. September.—The African Fort at Spin Baldak, where Lieutenant-Colonel Yate was interred, etc. Departments in War. Military Bands and Military Music. French Naval Programme, 1900–1906. Rifle Shooting as a Winter Evening Pursuit. October.—The New French First Class Armored Cruiser *Admiral Gueydon*. Military Bands and Military Music (contd.). Von Löbell Annual Reports on Military Matters in 1902. Some Notes on Outpost Duty in South Africa. French Naval Programme of 1900–1906. November.—The Brigade of Grenadiers of Sardinia. The Chinese Army. The Royal Naval Reserve. The French Naval Programme of 1900–1906.

Journal of the Association of Military Surgeons.—September.—The Acting Assistant Surgeon of the U. S. A. Ambulance for Mounted Troops. Some Observations while in the Philippines. Public Hygiene in Porto Rico. Quarantine as the Picket Line. Circumcision and Flagellation among the Filipinos. October.—Remarks on Yellow Fever. A further consideration of the necessity for immediate Celiotomy in Penetrating Gun-shot Wounds of the Abdomen in War. The Fourteenth International Medical Congress at Madrid, Spain. Epilatim among the Colingas. Experiences of a Medical Officer in the Tropics. December.—First Dressing on the Battlefield. Preservation of the Health of the Soldier.

Journal of the U. S. Cavalry Association.—October.—How I Went to the Philippines, and What I Saw. The Taking of Havana by the British and Americans. Athletic Training for Cavalry. Observations on the Japanese Military Academy. The Farriers' and Horseshoers' School. Last Days of the Insurrection in Southern Luzon. The U. S. Army Gunboat *Laguna De Bay*. Historical Sketch of the Third Cavalry during its Tour Abroad, 1898–1902.

Journal of the United Service Institution of India.—July.—Invasions of India. British Cavalry in India. Individuality and Invisibility in Uniforms. Litters for Carrying Sick and Wounded. Napoleon as a General. The Training of the Native Infantry Recruit. Horse-Breeding in India. Review of Our System of Military Education.

Journal of the U. S. Artillery.—September-October.—Stability Tests for Nitrocellulose and Nitrocellulose Powders. Report on Artillery Practice at Fort Monroe. Elevation Scale for Seacoast Guns. Examinations for Gunners. Battle Firing of R. F. Guns of the Roumanian Artillery.

Proceedings of the Royal Artillery Institution.—July, August and September.—The Effect of Gunfire on Modern Warships. Assuming the Probability of Raids by a Foreign Naval Power, What Are the Best Preparations to Repel Them, etc. Method of Concentrating the Fire of Dispersed Guns. Nelson and Napoleon. A

Criticism of Sea Power. The New Swiss Field Gun. Optical Raids for Military Purposes. Miniature Artillery Range. Steam Turbines. Mountain Artillery Equipments and Establishments.

Revue de l'Armée Belge.—May-June. Electric Arrangements in Fortifications. Wilhelm III of England and Maximilian Emanuel of Baden in the War of the Netherlands. The Rapid-Fire Field Guns. Recital of a Voyage in Egypt. July-August.—Narrative of a Trip in Egypt. The Rapid-Fire Field Guns, Ehrhardt System. The French Manœuvres of 1902. Electric System in Fortified Plans.

Revue d'Artillerie.—July.—The Japanese Rifle Model, 1897. The Adoption of a New Rifle in the United States. August.—Heavy Artillery in an Attack of Fortified Places. Instruction With Regard to Effective Firing of the Artillery Arm. October.—Mountain Howitzers Used in South Africa. Fifteen Days with a Battery in South Africa. Points on Rapid-Fire Field Guns.

Revue Militaire des Armées Etrangères.—August.—German ideas on Tactics. The Mexican Army. Studies on the South African War. Military News. September.—War-School of Turin. Studies of the South African War. Adoption for the Italian Cavalry of a Baggage Wagon with or without a Forge. October.—Construction of a Field Track by the Train Soldiers of Germany. November.—New Italian Regulations in the Cavalry. Reorganization of the Russian General Staff.

United Service (New York).—October.—Trials of a Staff Officer. Official Yachts. Personal Narrative of an Officer in the Revolutionary War. From Generation to Generation. War as a Factor in Human Progress and Development. Growth of the Japanese Navy. December.—An Indian Princess. The Duel.

United Service Magazine (London).—September.—Some Weak Points of Naval Administration. The Colonies and Imperial Defence. Our Fiscal and Educational Policy in Relation to Recruiting, etc. Education and Training of Military Officers. Recruiting Question. The British Army. Strategy and Tactics in Mountain Ranges. Royal Review of Aldershot. The Way Round a Flank. Russia. The Father of Indian Gymkhanas. October.—A Visit to Portsmouth and Osborne. The Naming of British Warships. Capture of the Taku Forts, June 17, 1900. Strategy and Tactics in Mountain Ranges. Report of the Royal Commission on the War in South Africa. The Military Question. The Health of the Army in Peace. Russia. The Turkish Soldier. Life Insurance for Naval and Military Lives. November.—Naval Raids and Home Defence. Evoluton of Modern Strategy. Industrial Use of Manœuvres. Reflections on the Manœuvres. The Artillery at the Manœuvres. Promotion and Examination of Army Officers. November.—Defence of our Naval Fortresses. Future of Our Coast Defence. Naval Policy of Canada. Turks in the Channel. Evolution of Modern Stategy. Transport and Supply. Strategy of the Paardeberg Campaign. Promotion of Regimental Officers. The Corps of Officers. Individuality and the Volunteers.

Naval.

Proceedings of the U. S. Naval Institute.—September.—Torpedo Tubes in Battleships. Scouts. The Jane Naval War Game in the *Scientific American.* "Reports of Fitness" in the Case of Naval

Academy Graduates. The Fiske Semaphore System. A Naval Telescope and Mount. U. S. Naval Propellers. The Rectangular Co-ordinates for the Solution of Spherical Triangles. Chronometer Rates. Range Finding in the Navy.

Miscellaneous.

Anales de la Sociedad Cientifica Argentina: regular issues, to date.
Armée et Marine: regular issues, to date.
Boletin del Centro Naval: regular issues, to date.
Bulletin of the American Geographical Society: regular issues, to date.
Current Literature: regular issues, to date.
Journal of the Western Society of Engineers: regular issues, to date.
La Belgique Militaire: regular issues, to date.
La Engeneira: regular issues, to date.
La Revue Technique: regular issues, to date.
Political Science Quarterly: regular issues, to date.
Proceedings of the American Society of Civil Engineers: to date.
Professional Papers of the Corps of Royal Engineers, 1902.
Pennsylvania Magazine of History and Biography: to date.
Review of Reviews: regular issues, to date.
Revue du Cercle Militaire: regular issues, to date.
Revista Di Artiglieria E. Genio: regular issues, to date.
Revista Maritima: regular issues, to date.
The Scientific American: regular issues, to date.
The Dial: regular issues, to date.
The Popular Science Monthly: regular issues, to date.
The Seventh Regiment Gazette: regular issues, to date.
The Medical Record: regular issues, to date.
The Century Magazine: regular issues, to date.
The Army and Navy Journal: regular issues, to date.
The Army and Navy Register: regular issues, to date.
United Service Gazette: regular issues, to date.

Received for the Library and for Review.

Adventures of an Army Nurse in Two Wars. By James Phinney Munroe. Boston, Little, Brown & Co., 1903.

The Giant of Three Wars. A Life of Geneal Winfield Scott. By James Barnes. New York, D. Appleton & Co., 1903.

Notes of Military Interest for 1902. Washingon, Government Printing Office, January, 1903.

Historical Sketch of the First Battalion of Engineers during Its Tour Abroad. By Major Smith S. Leach, Corps of Engineers, U. S. A., 1903.

The Military Law Examiner. By Lieut.-Col. Sisson C. Pratt, R.A., retired. London, Gale & Polden, Ltd., 1903.

Ranger Service in the Upper Valley of the Connecticut and the New Northerly Regiment of the N. H. Militia in the Revolution. By Albert Stillman Batcheller. Concord N. H., The Rumford Press, 1903.

Washington During War Time. A series of papers showing the Military, Political and Social Phases during 1861 to 1865. Collected by Marcus Benjamin. Washington, 1902. From Gen. T. M. Vincent.

The Military Service Institution.

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Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year $2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership $50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.

Gold Medal—1904.

First Prize—Gold Medal, $100 and Life Membership.

Second Prize—Silver Medal, Honorable Mention and $50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with $100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and $50 to the first honorably mentioned essay. The Prizes will be awarded under the following conditions:

1. Competition to be open to all persons eligible to membership.

2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January 1, 1905*. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize;* and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed fifteen thousand words, or thirty-five pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than 10,000 words.

II.—The Subject selected for the Prize Essay of 1904, is

THE EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN: WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY."

III.—The names of the members of the Board of Award will be announced in the Journal for March, 1904.

GOVERNOR'S ISLAND, N. Y.
Jan. 1, 1904.

T. F. RODENBOUGH,
Secretary.

The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B. (late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

One hundred dollars in Gold

for the best Essay, subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for 1904 is:

MILITARY HYGIENE; HOW BEST TO ENFORCE ITS STUDY IN OUR MILITARY AND NAVAL SCHOOLS; AND PROMOTE ITS INTELLIGENT PRACTICE IN OUR ARMY.

Competition is open to all Officers or ex-Officers of the Army, Marines, Volunteers or National Guard.

Three copies of the Papers on the subject must be submitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1904. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The names of the gentlemen chosen by the Council to constitute the Board of Award for this Prize for the year 1904, will be announced hereafter.

T. F. RODENBOUGH,
Secretary.

GOVERNOR'S ISLAND, N. Y
Jan. 1, 1904.

Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

* * *

Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows:

Hancock (Infantry) Prize.

The Hancock Prize: $50, and Certificate of Award; and $25, and Certificate of Award: to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, excepting that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive, or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending March 1 of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.

Fry (General) Prize.

The Fry Prize: to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.

Buford (Cavalry) Prize.

The Buford Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.

Hunt (Artillery) Prize.

The Hunt Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.